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March 1946

Vol. 159, No. 3

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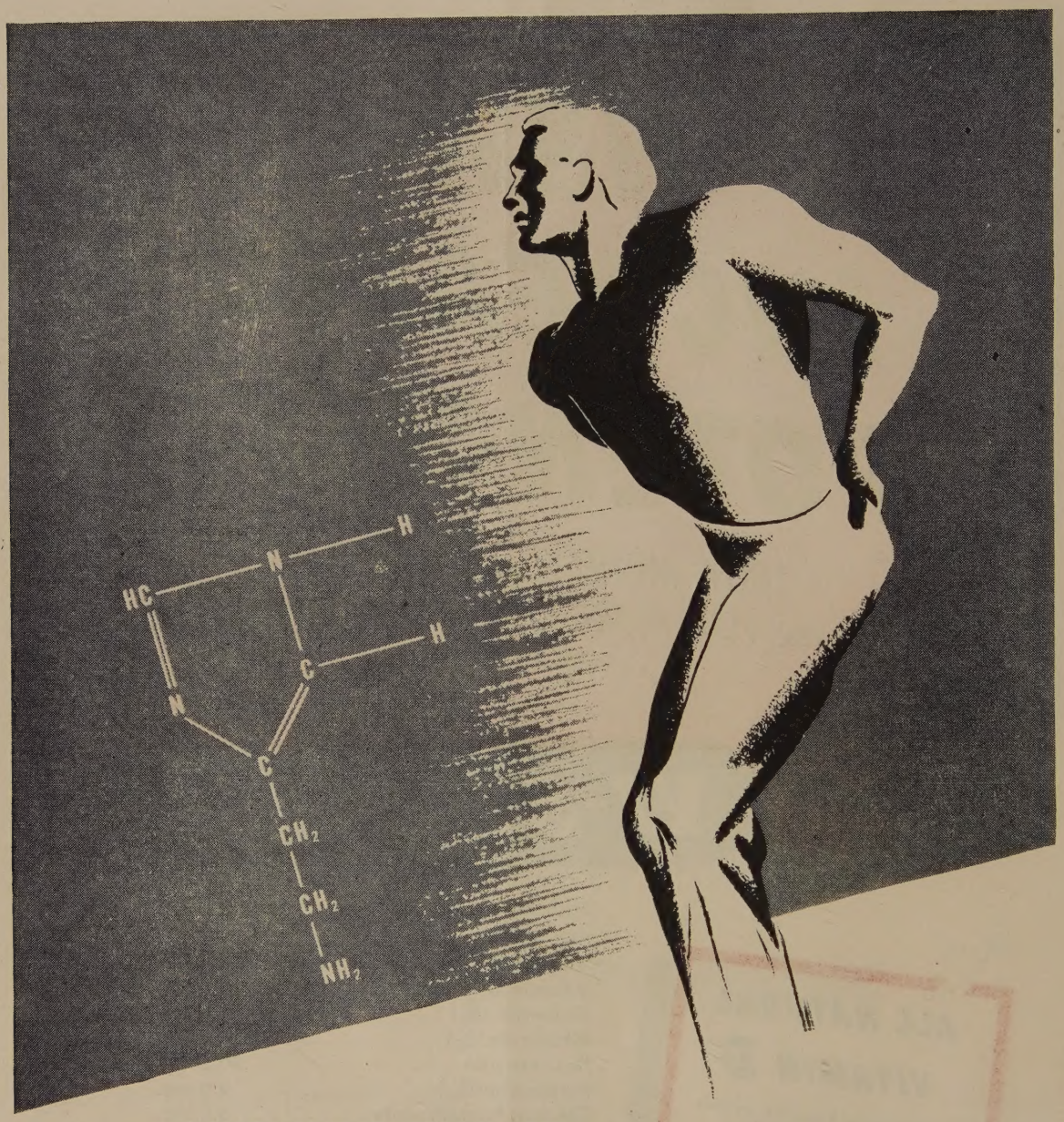

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Entered as Second Class matter at the Post Office at Rutherford, N. J., under the Act of March 3, 1879. Office of Publication, 210 Orchard Street, East Rutherford, N. J. Editorial and Executive Offices, 215 Fourth Avenue, New York 3, N. Y.

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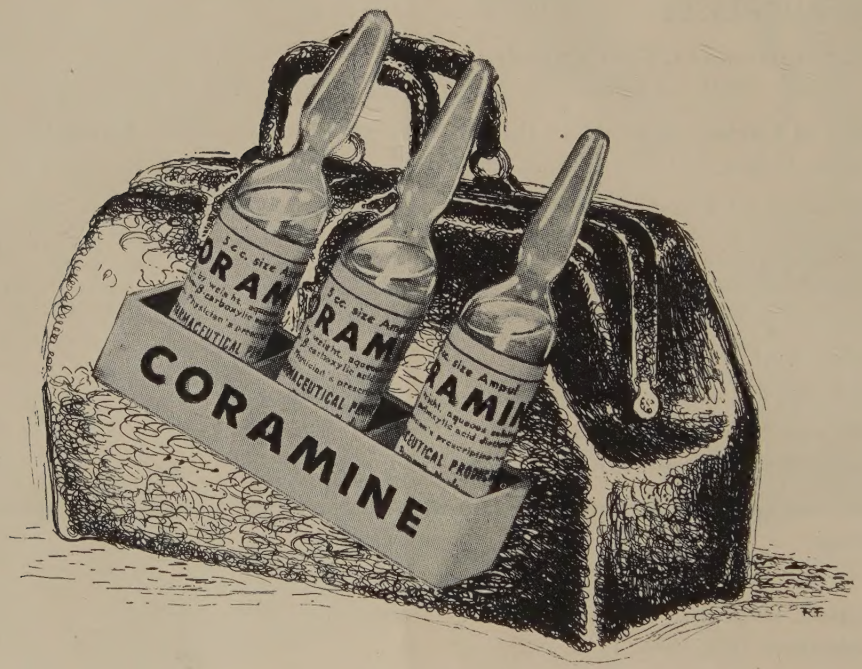

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Criteria Reductions for Doctors, Dentists and Veterinarians

Further criteria reductions to make additional doctors, dentists and veterinarians available for civilian practice have been announced by Surgeon General Norman T. Kirk. Under the new separation plan which became effective January 1, 1946 (with the exception of a comparatively small number in scarce categories), dentists, and veterinarians will be released with a critical score of sixty-five instead of the seventy points previously required. This same group will also be able to get out of the service, if the age of forty-five has been reached instead of the former age limit of forty-eight. The time factor of forty-two months service, which will make any of this group eligible for separation, remains the same. The following specialists in scarce categories will be released with a critical score of eighty, continuous service since Pearl Harbor, or if the age of forty-five has been reached: Eye, ear, nose specialists; orthopedic surgeons; and internal medicine specialists. A requirement of seventy points, forty-five months service, or forty-five years age limit will make the following eligible for separation: gastroenterologists, cardiologists, urologists, dermatologists, anesthetists, psychiatrists, general surgeons, physical therapy officers, radiologists, and pathologists. Plastic surgeons will be eligible for release if they have a critical score of eighty, or service since Pearl Harbor, or if they are forty-eight years of age.

Shriners Expand Program of Aid to Crippled Children

A national five-point plan to expand its fight against all crippling diseases affecting children, has been announced by the Shriners of North America. The new program has been approved by Dr. J. Albert Key, St. Louis, president of the American Orthopedic Association, member surgeons of the Association who serve as chief surgeons of the fifteen Shriners' Hospitals for Crippled Children, and W. Freeland Kendrick, chairman of the national board of trustees of the hospitals. The five phases of the new plan are: 1, The granting of scholarships, to be known as The Fellowships of the Shriners' Hospitals for Crippled Children, in orthopedic surgery to outstanding, qualified medical students, 2, an annual appropriation of $3,750 granted for scholarships in orthopedic nursing; 3, establishment of a research project to probe further the sources, methods of treatment and prevention of all crippling diseases attacking children; 4, expansion of present facilities and equipment of the fifteen Shriners' hospitals now in operation and the establishment of new hospitals in other localities; and 5, establishment of convalescent homes in connection with all Shriners' hospitals as rapidly as possible. The installation of recreational and occupational therapy courses to assure continuing physical improvement and self-development after healing has been completed.

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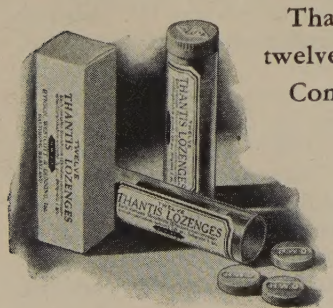

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Open Forum

Those Bugs May Get You!

T. SWANN HARDING
Falls Church, Va.

A short while ago the ailing and senile H. G. Wells pessimistically announced the impending annihilation of the earth and all its inhabitants. Just about the same time an American zoologist came to bat with the idea that the insects might soon wrest global dominance from man. They were both too nearly right for comfort, the zoologist being perhaps righter than he thought.

Mankind's global dominance, like that of his prehistoric predecessors, is probably fleeting. For some years now he has also been doing all that could reasonably be expected of him to make this dominance flit away even more fleetly. While he has been at the top of the heap of living things, alternating periods of war and peace have seen to it that the edifice erected by one civilization was destroyed by the next.

Scientific and technological progress have vastly improved the means man has at hand to foster race suicide. True, scientific research is still used on the one hand to increase and ameliorate human health and longevity, but it is utilized with far more verve and gusto to improve methods of species destruction. The paradox is striking.

We wage war in vehicles and by means of missiles with the speed of sound. We kill prophylactically with jellied gasoline, flame throwers, and disintegrated atoms. We even invent shells with brains that explode only in close proximity to their targets. But we also study cancer and discover sulfa drugs, penicillin, DDT, and diverse labor-saving devices.

Today we have learned to kill or maim more people and destroy more property in less time than ever. Conversely we are also able to patch things up more quickly than ever. But slaughter stimulates us to doing so much better a job of things at war than at peace, that our constructive efforts lag far behind our skilled techniques of destruction.

This leaves the human race in a paradoxical situation so absurd that it cannot last overlong. Obviously injurious to man's dominance, this situation grows worse instead of better. We possess the means to produce a peaceful civilization, highly cultured, luxurious, and comfortable, but we lack the urge to do so.

Suppose then that we just cannot help killing one another off in ever-increasing numbers. For instance, it is estimated that a properly shrewd and scientific enemy could without great difficulty place sufficient atomic bombs in hiding in a great country like ours to kill forty million people at one blow and to destroy fifty or seventy-five cities.

True, we are attacking insects by ever-improved means, but, at the rate we are going, it seems unlikely that we shall kill all of them off before we annihilate ourselves. In 1931 the famous entomologist, L. O. Howard, implied in his book, *The Insect Menace,* that insects might be the next dominant species after man. They are ready to take over and all we do to accomplish our own destruction favors their progress.

Moreover, even if we had some superinsecticide which would annihilate all insects, which DDT would not do, this would be unwise. We must learn to control and live with the insects because we cannot very well live without them. They not only spread diseases and destroy crops; they also pollinate our fruit and vegetable crops, make honey, play a vital rôle in soil formation and perform many other functions useful to man.

But perhaps our species tendency towards suicide has already given the insects fatal advantage over us. Time runs short for man to preserve his dominance, and the insect hordes impatiently await their final triumph.

It is no exaggeration to say hordes. Throughout the world there are nearly 625,000 recognized species of insects. In addition there are more than 16,000 species of mites, ticks, spiders, and similar invertebrates. More than 7,000 of these species cause human beings economic losses in the United States, and about ten percent of all our crops are consumed by insect pests. In addition, insects attack stored products, wooden buildings, forests, clothing, livestock, and man himself, thus causing damage that is conservatively estimated at about two billion dollars annually. That is rather a large tax even in these days of gigantic sums, while injurious fungi increase it to about three billions a year.

More rapid transportation makes it ever easier for insects to invade new territory. Every new crop we grow soon has insect enemies of its own. Many insects which are not at all menacing in their native habitats become pests of the first order elsewhere in the absence of their normal biological controls.

The insect toll tends to grow constantly and can only be held in check by the tireless ingenuity of chemists and entomologists who try unceasingly to discover or concoct better and better insecticides. New poisons must be found constantly to fortify man in his never-ending warfare against the insects.

Many have wondered what the ultimate effect will be of continually saturating large regions with poisons. Fortunately many of the insect poisons used are harmless or relatively harmless to human beings. Also fortunately, the residues in the soil appear soon to undergo chemical transformations which render them no longer toxic.

New insecticides of the type of rotenone and DDT offer hope, of course, but the latter especially is not only not a panacea for insects, but can be as damaging as it is helpful if unwisely used. What is worse, and even more startling, there is direct evidence that our habit of poisoning insects is tending to kill off weaker strains and to develop vigorous and more resistant strains which can sometimes consume ten times as much poison as their weaker brethren, yet survive.

The zoologist quoted earlier herein was Dr. Orlando Park of Northwestern University who gave vent to his feelings in *Science* for October 19, 1945. Whether he was familiar with a bulletin from the Virginia Agricultural Experiment Station by entomologist Walter S. Hough, it is impossible to say. The bulletin is entitled "Development and Characteristics of Vigorous or Resistant Strains of Coddling Moth."

The story is a simple one. Whereas the toxicity of sprays and the efficiency of spraying apparatus have increased enormously in recent years, the coddling

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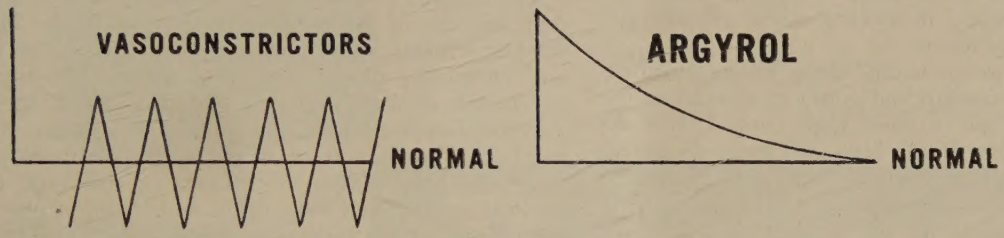

This vicious circle of vasoconstriction and compensatory congestion with many vasoconstrictors does *not* lead to restoration of normal function in the nasal passages.

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moth manages to do just about as much damage as it ever did to Virginia apples. This anomalous situation led Hough to experiments which definitely proved that a hardy race of the moth was being bred from vigorous individuals which survived spraying.

This tended to happen whether lead arsenate, cryolite, or nicotine sprays were used. Quite regardless, the superior strain of moth demonstrated vastly superior ability, even in the larval form, to enter apples sprayed with insecticides.

A broad-scale change had taken place in the coddling moth population of commercial apple orchards. The insects in such orchards possessed enhanced vigor and resistance in comparison with these same qualities of moths living in unsprayed home orchards.

Insecticides, therefore, tend to eliminate weaker and less resistant insects, leaving among the survivors an increased proportion of hardy individuals to reproduce their kind. The nature of the resistance appears to be one of general vigor. In other words the insects are flexing their muscles, developing their power, and really getting ready for us.

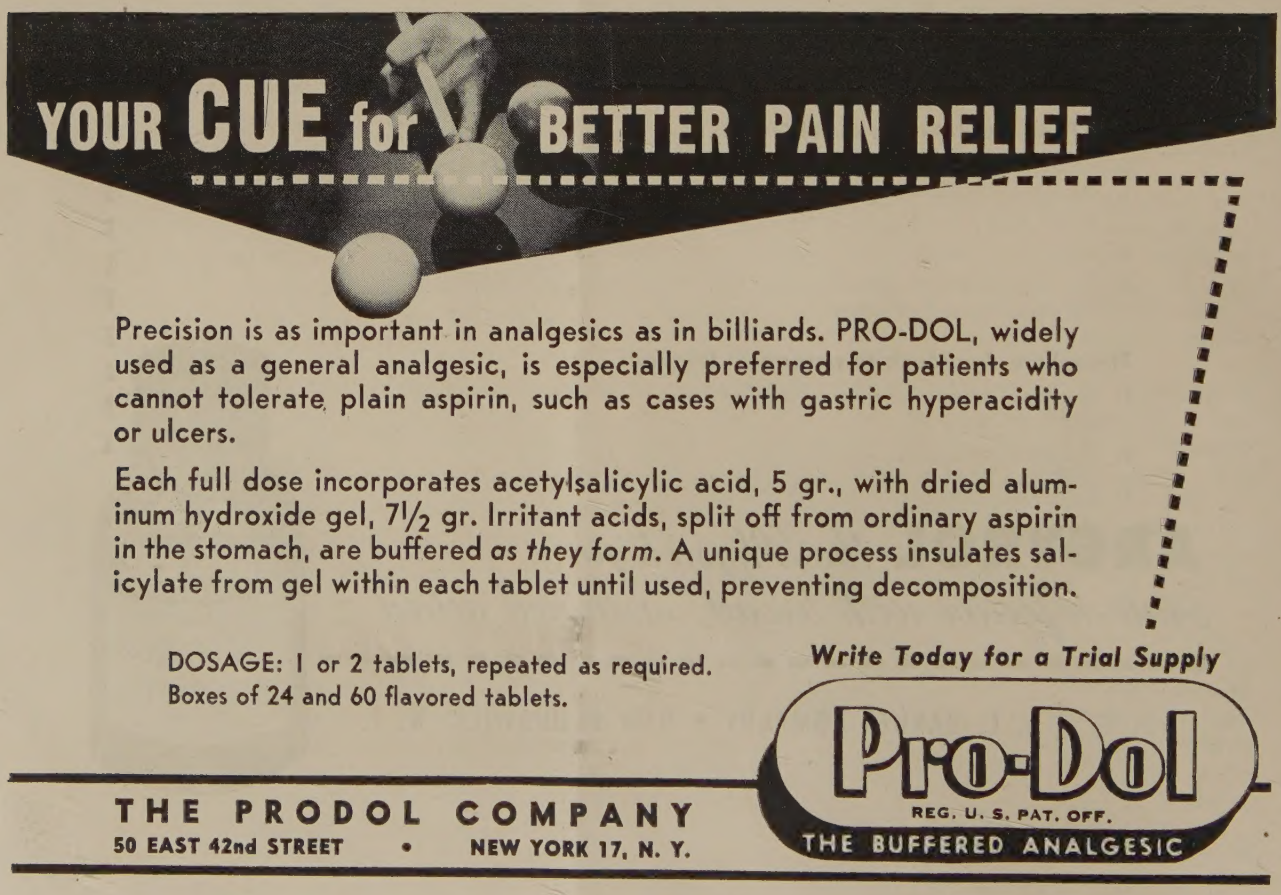
In time, while we go madly along killing ourselves off, they grow in strength and power as a result of the very agencies we use to effect their control. It looks very much indeed as if the bugs will not only get us after we are dead individually, but will take racial dominance from proud *homo sap,* and run the earth to suit their own quaint whims. That's just about the story.

Granite Gables

Army Psychiatric Achievements to Benefit Civilian Institutions

Civilian institutions can profit by the gains made by the Army in the field of psychiatry, Brigadier General William C. Menninger, director of the neuropsychiatry consultants division, said recently in a statement on the experiences of the Army with nervous and mental cases in World War II. Two major innovations in Army treatment of neuropsychiatric cases have been psychotherapy under sedation and group psychotherapy, he said. By applying the psychiatric lessons learned in recent years, the industrial, educational and criminal institutions of the country and society in general can derive tremendous benefits. In order to capitalize on these advances, however, there must be a wider dissemination of this knowledge among the practicing physicians in this country and more workers must be attracted to the field of psychiatry.

The marked strides made in neuropsychiatry, which represent one of the major achievements of the Medical Department, were made possible through the skill and knowledge of many of the nation's outstanding psychiatrists, who were marshaled together by the Surgeon General's Office to collaborate in the treatment and prevention of neuropsychiatric cases at a time when there were more cases of this type than medical science had ever dealt with before. The size of the problem is indicated in the fact that 314,500 men had been discharged by July 1, 1945, for neuropsychiatric causes. This figure represents forty-three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percent of the soldiers discharged for medical reasons. In addition, there were 130,000 more men discharged because of personality defects which made them unsuitable for the Army and out of 4,650,000 men rejected for all causes, 1,825,000, or thirty-nine percent, were rejected for some type of personality disorder.

General Menninger said that a majority of these discharged soldiers will be able to make a normal adjustment in civilian life. Surveys have shown that most of them are able to adapt themselves to their respective communities and are able to hold down jobs again. Satisfaction in work and play, security and understanding on the part of family and friends provide the best medicine for these veterans. Through its wide experience with neuropsychiatric cases in this war, the Army developed methods of treatment which proved effective in caring for the soldiers suffering from mental and nervous disorders.

The stress of combat produced a large number of what the Army calls "combat exhaustion cases." From thirty to forty percent of these soldiers were salvaged by psychiatric treatment in the first two days close to the front lines, while an additional twenty percent were made fit for duty in from five to eight days at an improvised unit called the exhaustion center.

In psychotherapy under sedation, which is sometimes referred to as narcosynthesis, narcoanalysis, abreaction and hypnoanalysis, the patient is given an intravenous dose of a sedative drug, bringing him to a state of semi-stupor in which he is encouraged to talk and relive the emotional experiences which helped bring about his condition. Frequently these patients could not talk about these experiences before the treatment and often did not remember them. With the help of a skilled psychotherapist, the patient is given "free and adequate drainage" for his emotional tension, which is a factor in his recovery.

The increased use of group psychotherapy constituted the second outstanding development in psychiatric treatment during the war. Under the leadership of a psychiatrist, a group of patients with similar problems met an hour a day for ten to thirty discussions. The groups were usually from about fifteen to twenty-five men. The patients, under the leadership of a skilled therapist, compared experiences, discussed their problems and through the insight gained in their cases good results were obtained in a fair percentage of patients treated in this manner.

General Menninger pointed out that the Army's experiences in the Medical Department provided convincing proof that the modern physician must become acquainted with psychological medicine and the dynamics of personality adjustment, as well as with the physical aspects of medical practice. Recent surveys in wards treating patients suffering from heart disease and gastrointestinal trouble showed that in as high as forty-one percent of the cases there was no organic trouble. The emotional maladjustment of the patients often leads to the malfunctioning of certain organs of the body.

The psychiatrist is concerned with the treatment of patients suffering from functional disorders due to emotional tension, he concluded, and the rôle of emotional factors in such cases, represented one of the most promising areas of research of any group of problems in medicine.

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Health of the Army in the Pacific Area

American soldiers in the Pacific are an exceptionally healthy body of troops, despite the fact many of them are located in the most disease-ridden areas in the world, Brigadier General Raymond W. Bliss, deputy surgeon general of the Army, said in a report of his recent tour of Pacific theaters. The low disease rate among American forces in those areas, he pointed out, is the result of the gigantic program of preventive medicine, involving the expenditure of millions of dollars, which the Surgeon General's Office inaugurated to guard the welfare of this country's fighting forces in foreign lands.

The overall hospitalization rate, which indicates the number of hospital beds occupied in relation to troop strength, was less than two percent, while in many areas it was as low as one percent, the General said. The occupancy of hospital beds even in this country is usually figured at about three percent, which means that the health showing in recent months in the Pacific has been far better than was expected, despite the disease hazards encountered there.

To accomplish such results, the Army Medical Department took the initiative in organizing an all-out attack against disease. The cooperation of the best civilian and military tropical medicine experts in the country were enlisted, special courses were organized to teach Army doctors how to care for troops exposed to these strange diseases, and a campaign of education in hygiene and field sanitation was inaugurated among the soldiers. Protective clothing, new repellents and insecticides, including DDT and drugs such as atabrine, penicillin and the sulfas, all played a part in this effective program. Malaria, dysentery, and infectious hepatitis are the diseases giving Army doctors the most concern in the zones visited.

Accompanying General Bliss were Brigadier General William C. Menninger, director of the neuropsychiatry consultants division of the Surgeon General's Office, and Dr. Eli Ginzberg, director of the resources and analysis division. The purpose of the trip was the study of medical service in the Pacific.

Amino Acid Therapy

Dr. Sidney C. Madden, professor of pathology, Emory Medical School, outlined the progress that had been made in amino acid therapy in a paper presented at the midyear meeting of the American Pharmaceutical Manufacturers' Association in New York last month. He pointed out that although amino acids were given experimentally by mouth forty-three years ago as a substitute for diet protein and were given intravenously thirty-two years ago as a substitute for food protein, the preparations were crude and impractical. It is only during the past ten years, he stated, that satisfactory ones have been developed. Mixtures of amino acids obtained by digestion of protein were first given successfully in 1939, he said, and mixtures of synthetic amino acids had more recently successfully replaced protein in human patients both by mouth and by injection into the vein or under the skin. As a result, he concluded, patients need no longer be deprived of protein because of inability or inadvisability of normal eating.

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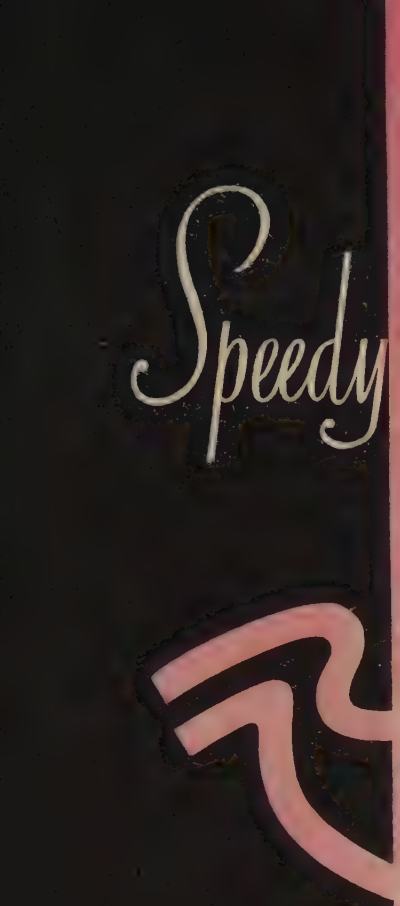

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The reaction of sodium aluminum silicate with the dilute hydrochloric acid of the stomach is a complex one. The sodium in LUDOZAN reacts with some of the hydrochloric acid to form sodium chloride. In this way, part of the acid is converted into an innocuous salt. Another part of the antacid reacts to form aluminum chloride and related compounds, which in water solution, are partly hydrolized. In both reactions, silicic acid is released and the strong free hydrochloric acid is converted into less acidic substances and a buffering on the acid side results. Such a sustained buffering keeps the patient symptom-free between doses of medication and meals.

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Mississippi Valley Medical Society Essay Contest

The Mississippi Valley Medical Society is resuming its annual Essay Contest which was discontinued during the war. In 1946 it offers a cash prize of $100.00, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics) and practical value to the general practitioner of medicine. Certificates of merit may also be granted to the physicians whose essays are rated second and third best. Contestants must be members of the American Medical Association who are residents of the United States. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society, to be held in St. Louis, Mo., next September, the Society reserving the exclusive right to first publish the essay in its official publication—the *Mississippi Valley Medical Journal* (incorporating the *Radiologic Review*). All contributions shall not exceed five thousand words, be typewritten in English in manuscript form, submitted in five copies and must be received not later than May 1, 1946. Further details may be secured from Harold Swanberg, M.D., secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

Cinchona From Latin America During the War

Statistics recently published by the United States Department of Commerce show that between December 1, 1941, and August 1, 1945, the United States imported 34,418,548 pounds of cinchona bark and approximately 700,000 ounces of cinchona alkaloids from hemisphere sources. Colombia was the leading supplier of cinchona bark, shipping 13,937,370 pounds to the United States in the years 1942-44 and the first seven months of 1945. Ecuador was second with 10,631,206 pounds, Bolivia next with 3,484,453 pounds, and Peru was fourth with 2,928,087 pounds. Guatemala supplied the United States with 2,573,683 pounds.

As for cinchona alkaloids, Ecuador, Panama, Colombia, Peru, and Bolivia and the Canal Zone supplied the United States with 295,125 ounces of quinine alkaloid in 1943. During the years 1932-44 and the first seven months of 1945, the United States received 26,873 ounces of quinine salts and derivatives from Venezuela, Colombia, Argentina, and Chile, and 335,376 ounces of cinchona bark, salts and alkaloids from Ecuador, Bolivia, Peru and Colombia. Peru shipped the United States 4,912 ounces of cinchonine and its salts in 1943.

Arsenic Poisoning

Dr. E. W. McChesney, of Winthrop Chemical Co., Inc., in an article appearing in the October issue of the *Journal of Pharmacology and Experimental Therapeutics,* throws some light on the way in which ascorbic acid in the blood stream reduces the effect of poisoning by trivalent arsenicals. An excess of ascorbic acid (vitamin C) in the blood, decreases the oxidation potential of the blood, and the author concludes that retarded oxidation of the arsenical is the reason for the lessening of its poisoning effect. While it cannot be shown directly that oxidation of one of the groups in the arsenical increases toxicity, strong laboratory evidence in this direction is cited.

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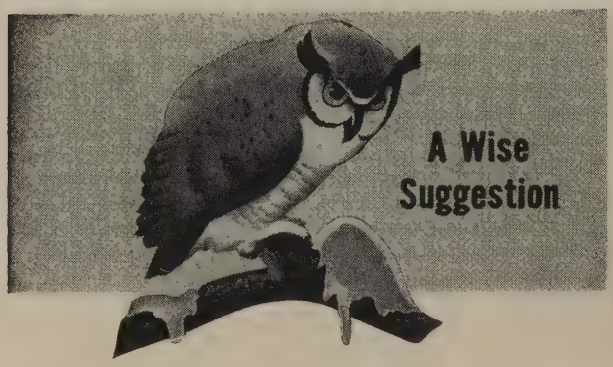

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Penicillin Treatment of Granuloma Venereum

Major F. Boyd Turner, Australian Army Medical Corps, has presented a report of the treatment of seven cases of granuloma venereum treated with penicillin (*Med. Jour. Australia,* Dec. 1, 1945). In all cases except one there was extensive ulceration of both labia, the inguinal and lymph glands were enlarged in all cases, and in one case had broken down, with the production of a chronic ulcer. Elevated temperature, rapid pulse and general signs of toxemia were present in all cases. The pathological findings in both smears and microscopic sections were described as not conclusive, but the microscopic appearances were consistent with the diagnosis of granuloma venereum with secondary infection. The Kline test produced positive results in four and negative results in three cases.

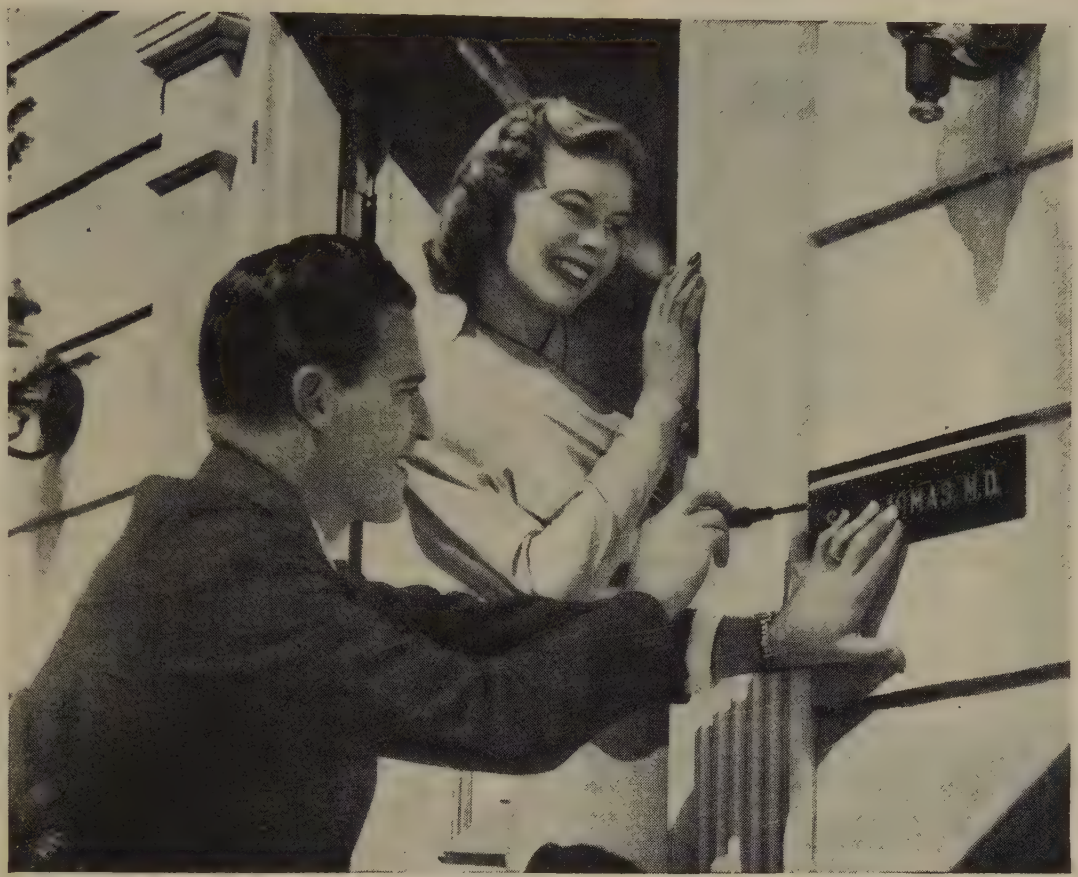
Parenteral treatment with penicillin was started on Oct. 24, 1944, in three cases and on Oct. 31st in the other four cases. This treatment was discontinued on Nov. 13th and the local application of penicillin treatment was started. Clinically, all the patients showed great constitutional improvement; the temperature became normal, or was only slightly elevated, and appetites improved. Smears taken from all the patients on Nov. 10th, presented the same cytological picture as before, but the organisms were not as numerous. Microscopic examination showed that the histological picture was not altered materially. Secondary infection was still evident, but was not as marked as on previous examinations. All the patients, after the local application of penicillin, continued to show improvement, but the ulcerated areas became moister. On Nov. 23rd, sulfanilamide powder was dusted on the ulcerated areas before the application of the penicillin cream, and these areas became less moist. All the patients continued to make progress, except one, who died. On Dec 12th, penicillin cream and sulfanilamide applications were discontinued.

The report on the progress of the seven patients showed that two patients died, in one the lesion was completely healed, and in two it was healing rapidly. The condition of one patient had improved considerably, but had reached a stationary condition. In the last patient, there was an active condition, with healing in some areas and fresh ulceration in others.

From the progress of the patients and the pathological findings, the author concludes that evidently penicillin has no direct effect on granuloma venereum, but will be valuable in clearing up secondary infection, thus allowing specific treatment to be more effective. The Kline reaction was unaltered fifteen weeks after penicillin had been discontinued.

Grants for Food and Nutrition Research

Ten American universities have been offered fellowship awards in a five-year program for postgraduate studies in food and nutrition financed by Standard Brands, Inc., according to *Science.* The universities to which the grant has been offered are: Cornell University in bacteriology; Harvard University, Indiana University, and Princeton University in organic chemstry; the Massachusetts Institute of Technology in chemical engineering, biology, or food technology; the University of Pittsburgh and the University of Wisconsin in biochemistry; and Rutgers University, Yale University, and Stanford University in microbiology.



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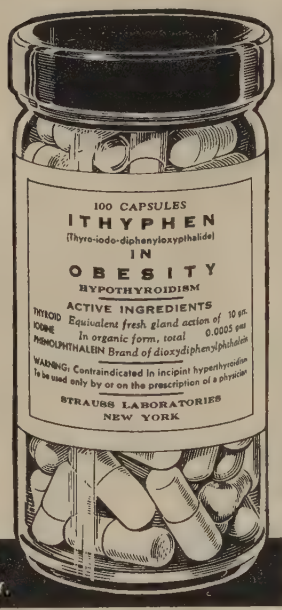

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Medical Poets

Sir Arthur MacNalty devoted his presidential address, delivered before the History Section of the Royal Society of Medicine, to the influence of medical poets on British poetry (*British Medical Journal*, November 17, 1945). He believes that while many medical men in England have been poets, there were only two who had "scaled the heights of Parnassus". These were John Keats and Robert Browning, both of whom abandoned medicine for poetry.

Sir Arthur MacNalty traced medical poets from the Spenserian period, beginning with Phineas Fletcher (1582-1650). The most noteworthy name among Elizabethan poet-physicians was Thomas Campion (1567-1619), who was educated at Peterhouse, Cambridge, but took no degree. His first collection of poems appeared in 1601, but not until 1606 did his name appear as a doctor of physick; he had probably studied medicine at one of the Continental universities. Sir Thomas Browne (1605-82) was not often thought of as a poet, but the *Religio Medici* was one of the most beautiful prose poems in the language, belonging to that brilliant age before poetry and prose divided their domain.

A medical poet of the time of King James I was Abraham Cowley (1618-67), an exponent of the metaphysical flight in poetry, whose lyrics survived in modern anthologies. Cowley never practised medicine, but, believing botany necessary to a physician, composed several books on herbs, flowers, and trees. Another medical poet of this period was Henry Vaughan (1621-95). In the neo-Augustan period there were many medical poets and wits, among them John Arbuthnot (1667-1735), friend of Pope and Swift, Sir Samuel Garth (1661-1719), Sir Richard Blackmore (1650-1729), and, in spirit if not strictly in time, Mark Akenside (1721-70), who had true poetic gifts, though his first works were overrun by learning and exactitude. Erasmus Darwin (1731-1802) must be mentioned if only for his poem *Botanic Garden*, Goldsmith (1728-74) as representing the new age in poetry when it began to deal with nature and everyday life, and Crabbe (1754-1832) as one of the last of the classicists in form and one of the first of the realists in matter.

Then came Keats (1795-1821), whose writing was the reincarnation of the Greek spirit of poetry, and whose far-reaching influence was traceable among the poets of the Victorian age. Lovell Beddoes (1803-49) had never received due recognition, perhaps because he never decided whether to devote himself exclusively to physiology or to dramatic poetry. Medicine's poet laureate was Robert Bridges (1844-1930)—her only laureate, though Southey was for a short time a medical student in the department of anatomy at Oxford. Bridges's *Testament of Beauty*, published in 1929 on his 85th birthday, was unique as the work of an octogenarian. Of his earlier poems, *On a Dead Child* could probably only have been written by one who had been a children's physician. The name of Ronald Ross should be mentioned; and Henry Head and Charles Sherrington had written poems of merit in intervals between their scientific work. But it was evident, Sir Arthur MacNalty concluded, that a divided allegiance prevented the attainment of the sublimest heights in poetry.

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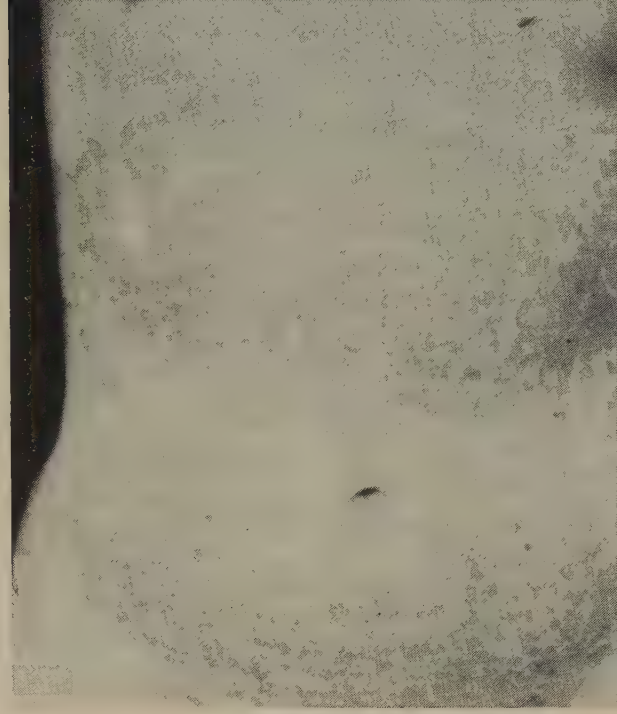

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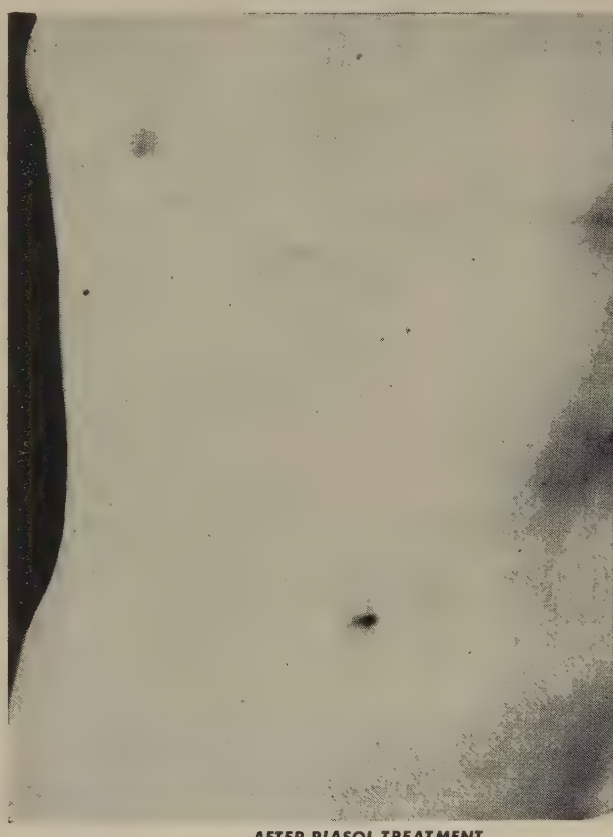

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RIASOL for PSORIASIS

Letters from a Physician to His Pre-Medical Student Son

A. CHESTER FIELD, M.D.
New York, N.Y.

(Concluded from page 84)

The college man holds an enviable position which is seldom vouchsafed to other members of society save those who are rich enough to indulge themselves in protracted leisure, and in such case the will or animus to become a scholar is seldom present because of the distractions which are always calling one away from any set purpose.

What about the reading of modern languages such as French and German? These are taught in the colleges for the training of the memory and to enable one to get the language of the great writers at first hand rather than in translation. The teachers of the lower classes, freshman and sophomore, are usually recent graduates who have made honors in course and are, therefore thought to be competent to give instruction. They have little or no knowledge of the spoken language, and could not understand any conversation of any length with a native, nor could they answer him were he to ask a question. This has always seemed to me to be little short of ridiculous; for in learning any language, even one's own, it must always be spoken before it is written. My own experience is a case in point.

Having gone through four years of prescribed undergraduate training, I was graduated with honors in French and German and was myopic enough to regard myself as a finished product, in short an educated young gentleman. After receiving my degree in medicine four years later, I practiced medicine and saved enough money to go abroad and continue my special postgraduate medical subjects in Vienna and Berlin. Making the journey by slow stages from Amsterdam to Southern Europe, I arrived in Strassburg about an hour before sundown and made up my mind that I must see the famous Cathedral and its even more famous clock at once. Some one at the hotel gave me rather indefinite directions in English as to the tram which would bear me to "Der Dom" as they call it, and I boarded a car with great *sang froid* saying these two magic words to the conductor before sitting down. Finally the car stopped and this functionary jabbered away at me in the most unintelligible fashion, he might have been speaking Choctaw for all I knew, and seeing my bewilderment he seized me by the arm, shoved a transfer into my hand and said something about "Umsteigen" to the "Ha Vagen" which I interpreted to mean change cars. Well I did change and after riding an interminable distance summoned my best German in a sentence which sounded grammatical to me but which meant nothing to the conductor who began to quiz me in a running chain of words which were glued together and quite inseparable as far as I was concerned. Becoming more and more embarrassed I jumped from the car and wandered until I reached the cathedral fully determined to procure a tutor as soon as I should settle down in Vienna. The lesson was very effective and I did well with my teacher, so that when I packed up my belongings and moved on to Prague I could converse very well, so well, in fact, that I was taken for a Prussian on two occasions.

The house where I lived in Vienna was conducted by a fine gentlewoman named Frau Lina Essler, a sister of the far-famed Heinrich Conreid, one time impressario at the Metropolitan Opera House. Frau Essler had three children, the youngest a boy of fourteen years. This boy had learned English in High School, had never been outside of Vienna and spoke my language with a precision and chasteness which made me ashamed of myself. That anecdote serves to illustrate the difference between the continental teaching of a foreign language and the American way. But in all fairness I must say that the American way of doing many other things is far superior to the Austrian.

The Newspaper Habit

Finally, I wish to warn you against wasting time with the newspapers. There is probably no country in the world which is as surfeited with newspapers as the United States. It used to be worse when some of the dailies got out a morning edition which you read at your breakfast table, an afternoon edition which was on the stands at eleven a.m., and an evening edition which could be bought at 3:30 p.m., with an occasional "extra" hawked through the streets at any time of the day or night which you purchased for a nickel and which usually contained news that you had read the day before plus some report of a recent fire or suicide. It is better now. We do not have so many editions, but we still have too many. It is a sort of pernicious habit, this buying of papers which are often thrown away after a glance or two at the headlines on the first page, and a scant moment with the tabulated stock sheet. On the other hand many persons read the voluminous Sunday edition thoroughly. This requires three or four hours if you are consistent about it, and consumes time that you might well spend with a good book. It is a mystery as to who reads the classic writers these days, but the libraries are always reporting an increasing number of patrons who take books away with them, ostensibly to read if not to "digest" as Bacon put it,—our lives are much to hurried to digest anything. But there can be little doubt that this newspaper habit is pernicious when carried to extremes as it so often is, for it is a rank waste of time, except for the special articles which not infrequently are written by literary craftsmen, and sometimes by renowned writers like Wells and Chesterton. Even so the best of Wells and Chesterton is to be found in their books and not in potboiling hack work however entertaining it may seem to be. It is merely a question of choosing between the essentially fleeting and ephemeral and the standard product of genuine thinking which is set down for the delectation of generations yet unborn.

Microfilm Service Set up in Paris.—Plans for setting up microfilm service in Paris, which were started early in 1939 by Dr. Atherton Seidell, now honorary consultant and representative of the Army Medical Library, were completed recently when Dr. Seidell made a trip to Paris for that purpose. Microfilm service is the Army Medical Library's system of disseminating the latest medical and surgical knowledge to various overseas areas, some of which were cut off from any other source of information. From forty thousand to sixty thousand feet of microfilm were sent out monthly during the war.

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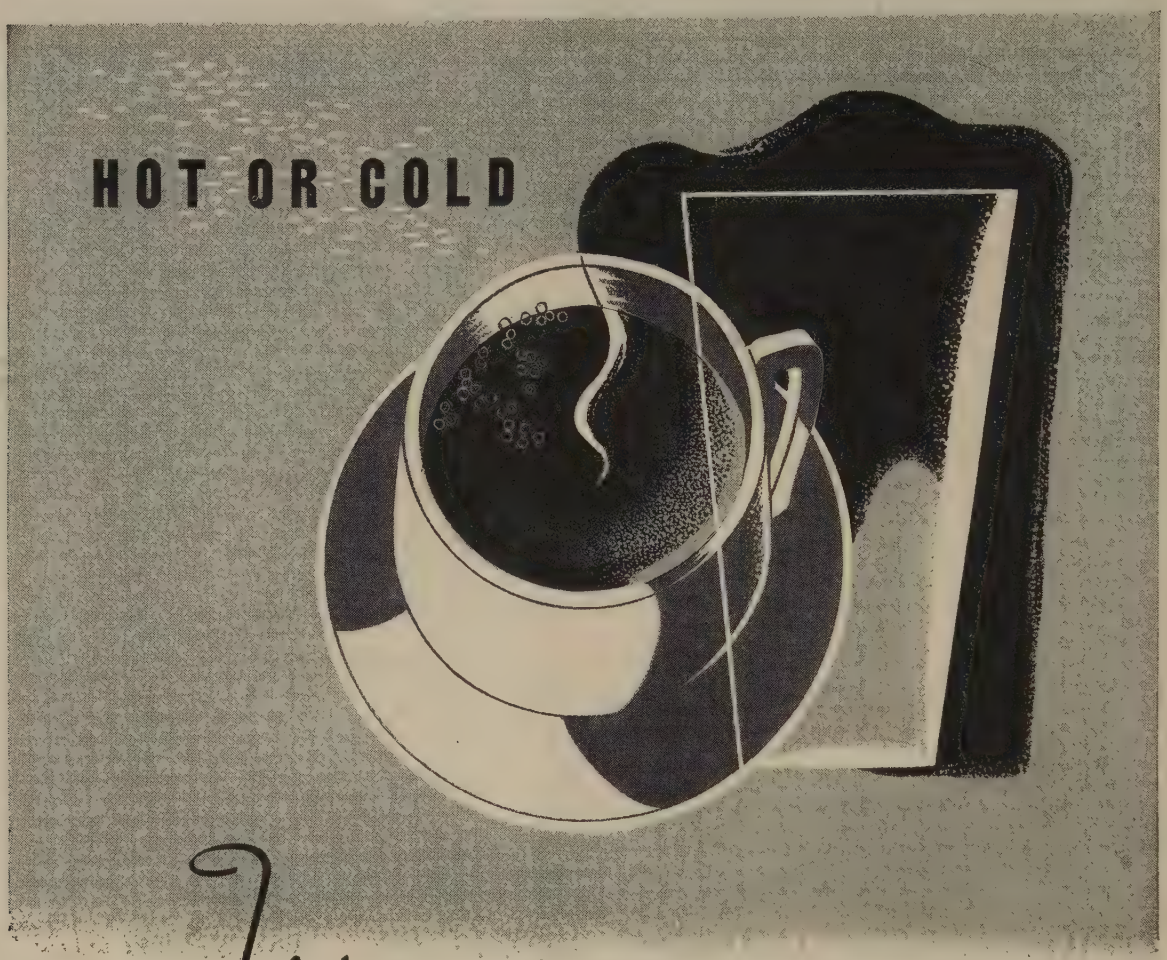

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MEDICAL RECORD

PUBLISHED MONTHLY BY
THE MEDICAL JOURNAL AND RECORD PUBLISHING CO., INC.

VOL. 159, No. 3 MARCH 1946 WHOLE No. 2758

ARTHRITIC SYNDROMES*

1. *Felty's Syndrome and Psoriatic Polyarthritis in the Same Patient.*

JULIUS BAUER, M.D. and JAMES T. McDUFFIE, M.D.
Los Angeles, Calif.

Single case reports are justified if they represent rare occurrences that, together with similar observations of other authors, may, in the future, make it possible to understand and interpret correctly their up to date unknown etiology and pathogenesis. It may even happen that a single case can shed some light upon the nature of a pathological process.

This, we believe, is true with regard to the present observation of a syndrome not reported so far in the literature. It is a case of a female patient who presented first the syndrome of Felty, underwent splenectomy which cured the severe neutropenia but not the polyarthritis, and who developed psoriasis four years after splenectomy.

Mrs. M. G. Sh., thirty-eight years of age, a housewife from Ohio, was admitted to Glendale Sanitarium and Hospital March 11, 1945. She noticed the first symptoms of her disease about ten years ago. She experienced a great lack of strength and marked fatigue and was suffering from pain in her left hip. About seven years ago she developed arthritis in various joints such as the knees, wrists, finger joints and elbows. There was considerable swelling in the affected joints. An abscessed tooth and the tonsils had been removed and she was treated with large quantities of vitamin B. Five years ago (Oct. 10, 1940) she was first seen by Dr. R. G. Pearce[1] at the Akron, Ohio Clinic. Dr. Pearce found in addition to the chronic rheumatoid polyarthritis a very large spleen and a large liver. The patient's blood count was at that time: erthrocytes, 3,350,000; leucocytes, 1,150; polymorphonuclears, one percent; lymphocytes, 60 percent; monocytes, 5 percent; eosinophiles, 30 percent; basophiles, one percent; blastocytes, 3 percent. The sedimentation rate was 65 mm. in sixty minutes. Dr. Pearce's diagnosis was Felty's syndrome. Frequent blood counts were made which did not show any change.

Dr. Russell L. Haden, of the Cleveland Clinic, confirmed Dr. Pearce's diagnosis and advised splenectomy which was performed December 17, 1940. On October 15, 1940, the blood report was: erythrocytes, 3,550,000; hemoglobin, 65 percent of normal; color index, 0.92; reticulocytes, 8.6 percent; slight anisocytosis, slight punctate or diffuse basophilia. The volume of packed red blood cells was 67 percent of normal; leucocytes, 1,600. Differential count: neutrophiles, 3 percent; lymphocytes, 39 percent; eosinophiles, 32 percent; monocytes, 25 percent; basophiles, one percent. There were no abnormal forms of white cells and platelets were normal. Icterus index was 4.

At the operation a very large spleen reaching almost the umbilicus was removed. Three accessory spleens along the hilar region were found. The liver appeared normal at that time. After a rather stormy convalescence the patient began to improve.

On January 9, 1941, her blood count was as follows: erythrocytes, 4,300,000; hemoglobin 75 percent; leucocytes, 4,350; polymorphonuclears, 10 percent; lymphocytes, 51 percent; monocytes, 29 percent; eosinophiles, 6 percent; basophiles, 4 percent. She felt better both generally and as far as her arthritis was concerned. At the beginning of 1942 the arthritis again became much worse. Dr. Pearce saw her in March 1942 and found the blood count to be: erythrocytes, 4,580,000; leucocytes, 7,550; polymorphonuclears, 54 percent; lymphocytes, 42 percent. Dr. Pearce advised the patient to have a treatment at Clifton Springs.

The patient's menstruation had started at the age of fourteen and had always been regular, without pain but with some premenstrual and menstrual tension. As a rule the arthritic pain was worse during menstruation. The patient had been pregnant five times, had four children and one abortion. The last child was born sixteen months ago (1943). The patient stated that she felt much better during this pregnancy than at any time in the last five years. The patient's family moved to California in Sept. 1944. Shortly after her arrival in California, a new attack of arthritis occurred with increased pain and swelling in all the joints of the extremities except the hip-joints, great weakness and loss of weight, approximately twenty pounds. The present attack was the worst she had ever had. For the last two months several scaly skin lesions had developed in the region of the right ankle, and gradually over the knees, elbows, on the forehead and in the sacral region.

Previous diseases.—During her childhood the patient had measles, mumps, and chickenpox. She had

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[1]We are greatly indebted to Dr. R. G. Pearce for having given us the opportunity to study the history of this case from the records of the Akron Clinic (Ohio).

been suffering from frequent attacks of earache. The ears had drained several times. Eight years ago she had a severe attack of sore throat after which her tonsils were removed.

Family history.—Both parents were living and well. The father had a thyroidectomy at the age of fifteen. One sister had an abnormal kidney removed. Another sister died at the age of twenty-nine from heart disease.

Present state.—A fairly well nourished white patient, immobilized on account of extensive inflammatory involvement of the joints. Painful swelling of the elbows, wrists, finger-joints, knees and toes; motion in the affected joints greatly limited; motion of the right shoulder limited by pain.

At the regions indicated above there are erythematous guttate to plaque-sized lesions with a few smaller scaly papules. All of these lesions present silvery, dry and abundant imbricated scales. After removal of the scales there are papillary bleeding points. There is also stippling of the finger nails (Dr. J. D. Rogers).

The left eardrum is perforated. No abnormal lymph-nodes are to be palpated. There is a scar along the left costal margin. Lungs, heart, arteries, abdomen and nervous system do not show any abnormality.

Blood pressure, 118/70; pulse rate varying between 70 and 110; temperature varying between 97° and 100°; respiration 20.

Laboratory tests.—Urinalysis showed no abnormality. Blood count, Mar. 12, 1945: red blood cells 3,950,000; hemoglobin, 78 percent; color index 0.99; white cells, 12,250; neutrophiles, 72 percent; eosinophiles, 2 percent; basophiles, one percent; lymphocytes, 21 percent; monocytes, 4 percent; sedimentation rate, 50 mm in sixty minutes. Mar. 27, 1945: Red blood cells, 3,790,000; hemoglobin, 74 percent; color index 0.97; white blood cells, 10,650; neutrophiles, 67 percent; eosinophiles, 2 percent; basophiles, one percent; lymphocytes, 22 percent; monocytes, 8 percent. Basal metabolism, minus 21 percent. Blood culture, negative. Gastric analysis: no free hydrochloric acid; total acidity 10.

X ray findings.—The hands showed osteoporosis and roughening of the joint spaces in the interphalangeal joints. The elbow showed marginal lipping and narrowing of the joint spaces especially marked on the left side. There was general atrophic arthritis of the hands and elbow joints.

Treatment.—The patient was treated with sulfadiazine, four grams per day; penicillin, a total of 1,825,000 units; endothyrin, one-half grain twice a day; sodium salicylate, feosol and eventually with intramuscular injections of a sulfur preparation (sulfanose). It was necessary to relieve the pain with codeine and demerol. Psoriasis was treated with tarzinc paste and ultraviolet radiations. After several weeks the patient's arthritic condition improved considerably. We are not in the position, however, to determine which of the therapeutic procedures—or even whether any one of them contributed to the improvement, since it is known that spontaneous intermissions quite often occur in rheumatoid polyarthritis. It is worthwhile mentioning, however, that the psoriasis remained unchanged when the patient was so far improved as to be able to walk again.

Summarizing this case history, it is evident that our patient at the age of about twenty-eight gradually developed a chronic atrophic infective type of polyarthritis associated with considerable splenomegaly, leucopenia, mild anemia and eosinophilia. The combination of chronic polyarthritis with splenomegaly and leucopenia is known as Felty's syndrome (1924). Splenectomy resulted in complete restoration of the abnormal blood picture but had no obvious influence on the course of what must be considered to be rheumatoid polyarthritis. For about four years the patient's clinical picture did not permit any diagnosis other than chronic rheumatoid polyarthritis. During the last few months eruptions of psoriasis vulgaris appeared and justified the diagnosis, polyarthritis psoriatica.

Conclusions From This Case

1. The clinical signs characterizing Felty's syndrome as a variety of chronic infectious polyarthritis disappeared completely after splenectomy. Hence it may be inferred that they represent a complication of chronic rheumatoid polyarthritis which may or may not be caused by the same etiological factor as the arthritis, but which is independent of the latter as far as the response to treatment is concerned.

2. Since all features of Felty's syndrome, except the arthritis, are subsiding after splenectomy, it is justified to assume that they are accounted for by a functional hyperactivity of the spleen.

3. This splenic syndrome, consisting of splenomegaly, neutrophilic leucopenia, and anemia, is clinically identical with the pathological entity that has been described as "primary splenic neutropenia" by Wiseman and Doan (1942). Both are corrected by splenectomy. Whether the neutrophilic leucopenia is caused by excessive destruction of the leucocytes in the spleen, or whether the hyperactive spleen is liberating a hormonal factor suppressing the leucocytopoietic, and in a lesser degree also the erythrocytopoietic, function of the bone marrow has not to be decided here.

Hyperplastic bone marrow, however, has been reported in both the Wiseman-Doan's and Felty's syndrome (Price and Schoenfeld, 1934; Williams, 1936; Lockie, Sanes and Vaughan, 1942; Steinberg, 1942), and it is suggestive of the first rather than the latter alternative. On the other hand, one should realize that the hormonal action of the spleen may not inhibit the production of leucocytes in the bone marrow but may well prevent their liberation into the blood stream. Hypersplenism may establish a barrier to the entrance of leucocytes into the circulation (Steinberg, 1942).

Against such a hypothesis militates the fact that administration of pentose nucleotide has not been found to benefit patients with Felty's syndrome (Collins, 1937) nor those with "primary splenic neutropenia" (Rogers and Hall, 1945). Microscopic evidence of increased destruction of leucocytes in the spleen was found by Wiseman and Doan (1942) but was missing in other cases of "primary splenic neutropenia" (Rogers and Hall, 1945).

4. The association of chronic rheumatoid arthritis with hypersplenism raises the question whether it should be regarded as merely the coincidence of two morbid entities or whether the hypersplenism characterizing Felty's syndrome might be the result of the same infectious process accounting for the rheumatoid

polyarthritis or be even the consequence of the systemic joint disease.

5. Since the first reports of Chauffard and Ramon (1896) and of Still (1897) it has been known that chronic rheumatoid polyarthritis may be associated with splenomegaly and generalized lymphadenopathy both in adults and in children. The incidence of splenomegaly in rheumatoid arthritis was found to be six percent by Waterhouse (1907), eight percent by Freund (1929), ten to fifteen percent by Dawson (1935), twenty-one percent by Coates and Delicati (1931) and twenty-three percent by McCrae (1927). Talkov, W. Bauer and Short (1942) observed splenomegaly in seven percent of 293 unselected cases of rheumatoid arthritis. Lymphadenopathy has been recorded far more frequently by all authors. It is shown by these figures that splenomegaly and rheumatoid arthritis are not associated by pure chance coincidence. Some kind of splenopathy may obviously participate in the disease process of rheumatoid polyarthritis.

6. Much less frequently than splenomegaly is high grade granulocytopenia encountered in rheumatoid polyarthritis. Leucopenia consistently under 5,000 was found in only one percent of the cases by Talkov, W. Bauer and Short (1942); leucopenia below 2,000 in less than five-tenths percent by Collins (1937). Our own experience (J. Bauer, 1924), however, is in accord with that of Hench (1940), i.e., "that in general there is mild leucopenia with relative lymphocytosis, occasionally mild eosinophilia (five to nine percent)". Doan (1940), too, considers a mild secondary leucopenia as "a rather frequent" finding in chronic infectious polyarthritis; in his opinion, it is even more frequent than splenomegaly. Mild anemia is quite a common sign of chronic rheumatoid arthritis.

7. Although proof of the following hypothesis is lacking, it seems reasonable to assume that splenomegaly accompanying so many cases of rheumatoid arthritis might indicate a mild hypersplenism, and that Felty's syndrome might represent but an extreme degree of this hypersplenism.

8. Such a hypersplenism accompanying rheumatoid polyarthritis may, in its severe form, be clinically identical with Wiseman's and Doan's "primary splenic neutropenia"; etiologically, however, it is different. It is not "primary" but obviously secondary to the arthritic process. It could well be that it represents, as Hench (1933) believes, "not a complication but a defense mechanism on the part of the reticuloendothelial system to infection". In this case we could add the morbid picture of Felty's syndrome to the many others in which biological adaptation to and compensation of certain pathological processes becomes the origin of new disorders (J. Bauer, 1928). If hypersplenism actually represented a defense mechanism in rheumatoid arthritis, Felty's syndrome, by virtue of a serious leucopenia, would be an unwelcome side-effect endangering the patient more than the original infectious articular disease. There is no evidence, however, that hypersplenism in rheumatic arthritis is a defense reaction. No ill effects of splenectomy upon the arthritic process have been reported. Temporarily at least, even some improvement of the arthritis has been observed in occasional cases (Hanrahan and Miller, 1932; Craven, 1934; Steinberg, 1942; Langston, White and Ashley, 1945).

It is more probable, therefore, that as Felty (1924) surmised, and as Lockie, Sanes and Vaughan (1942) as well as Talkov, W. Bauer and Short (1942) believe, a chronic low grade infection affects not only the joints but also other structures, especially the spleen and lymph nodes. As a matter of fact, even the striated muscles and peripheral nerves have been found to be involved in rheumatoid arthritis (Curtis and Pollard, 1940; Freund, Steiner, Leichtentritt and Price, 1945) and a nodular perineuritis and polymyositis was described by the latter authors. "The variable response of the different tissues of the host determines the symptomatology and accounts for the different clinical pictures observed" (Lockie, Sanes and Vaughan, 1942). The origin of the low grade infection in our patient is suggested by her past history. She had been suffering from a chronic suppurative otitis media and a severe throat infection.

9. The possibility that the systemic disease of the joints rather than its main causal factor, that is, the low grade chronic infection, might perhaps account for the involvement of the spleen, could be suggested by a single case report of von Jaksch in 1908. This was a case of gouty arthritis associated with splenomegaly and leucopenia. Yet the singularity of such an association does not permit of any conclusion.

10. Wiseman and Doan (1942) point out that the syndrome of "primary splenic neutropenia" and Felty's syndrome "must remain symptomatically closely related but probably etiologically distinct." They do not believe that the syndrome they were describing "is fundamentally an infectious process, although, like congenital hemolytic icterus and probably essential thrombocytopenic purpura, the clinical and hematological features may become apparent or the syndrome be precipitated during or following an infection". Since in Felty's syndrome the polyarthritis is the primary and first manifestation of the disease and splenomegaly with leucopenia develops later (Lockie, Sanes and Vaughan, 1942), there can hardly be given any interpretation but that hypersplenism in these cases has to be regarded as "secondary" or symptomatic in contradistinction to the "primary" variety of hypersplenism as delineated by Wiseman and Doan (1942). Hypersplenism of both varieties is amenable to cure by splenectomy. In the primary type the patient is cured; in the secondary or symptomatic, however, his chronic infectious polyarthritis remains essentially unchanged; he only gets rid of the complicating hypersplenism.

11. Anemia is encountered in both the Felty's and the Wiseman-Doan's syndrome. In the latter it has been found to be hemolytic in nature and was interpreted as a result of hypersplenism. There is no evidence of increased hemolysis in our case or other cases of Felty's syndrome. However, even in "primary splenic neutropenia" anemia is not always associated with an increased icterus index (Wiseman and Doan, 1942). After splenectomy in our patient the anemia improved, together with the general condition, only temporarily but recurred with a new bout of chronic polyarthritis. It seems probable, therefore, that the mild anemia encountered in chronic rheumatoid polyarthritis, with or without splenomegaly and leucopenia, is the direct result of the chronic infectious process rather than of hypersplenism. Thrombocytopenic

purpura occasionally encountered in Wiseman-Doan's disease has not been reported in Felty's syndrome. The secondary hypersplenism of the latter must, therefore, be regarded as even more selective than the primary hypersplenism of Wiseman-Doan's disease in so far as it seems to be limited exclusively to the splenic function regulating the leucocyte count in the circulating blood.

12. Considerable eosinophilia had been found in our patient before splenectomy was performed. It subsided after splenectomy and did not recur, although the polyarthritis took its usual progressive course. The question arises whether or not the eosinophilia was dependent on hypersplenism. Eosinophilia has frequently been reported in Felty's syndrome. One of the original cases of Felty (1924) had eleven to thirteen percent eosinophiles. It is not infrequent, however, in chronic rheumatoid polyarthritis without splenomegaly and leucopenia either. J. Bauer (1924) encountered eosinophilia of 8.1 percent among 6,800 leucocytes, 10.6 percent among 7,870 leucocytes, and even 17.3 percent eosinophiles in different cases of simple chronic rheumatoid polyarthritis. Yet eosinophilia was also found in one case of Wiseman-Doan's (1942) syndrome of splenic neutropenia. Splenectomy, however, does not seem to have significantly altered the varying number of eosinophiles (between sixteen and zero percent in this case). The same holds true for the case of Felty's syndrome reported by Craven (1934). There was a persistent but variable eosinophilia and small groups of eosinophilic cells were found in the splenic pulpa. Our case is unique in that the considerable eosinophilia of thirty to thirty-two percent subsided after splenectomy. This is all the more remarkable since it is known from both experimental and clinical experiences that eosinophilia occurs after or is furthered by splenectomy (Hanno and Mensh, 1945). A satisfactory interpretation of our case in this respect cannot be offered.

13. Cutaneous pigmentations and enlargement of the lymphnodes were not noted in our case. They are known to occur not only in Felty's syndrome but also in uncomplicated cases of chronic rheumatoid polyarthritis.

Arthritis and Psoriasis

14. At the time of our observation of the patient her condition had to be diagnosed as polyarthritis psoriatica. This association of the two well defined morbid entities, chronic polyarthritis and psoriasis, was the object of much speculation. In spite of its infrequency it cannot be due to mere coincidence. Among three hundred unselected cases of rheumatoid arthritis, psoriasis was found in 2.7 percent, as compared with the incidence of psoriasis of seven-tenths percent in a similar number of controls (W. Bauer, Bennett and Zeller, 1941). The combination with arthritis was encountered in about one percent of psoriasis vulgaris (Comroe, 1944).

One group of authors advocated the theory that a special germ is the cause of this syndrome affecting both the skin and the joints. Another group believed in a common metabolic disturbance. A proof of these hypotheses is lacking but a common cause acting on both the joints and the skin is an inevitable postulate (Garrod and Evans, 1924; Jungmann and Stern, 1944). We believe that this common cause consists of an abnormality of the genotype. The reasons for this assumption have been given at length by one of us in 1931 (Bauer, 1945).

In collaboration with Vogl, J. Bauer was able to show that in certain families with such a polyarthritis psoriatica, some members were suffering from psoriasis only, others from a chronic polyarthritis only, and some presented the combined syndrome. Furthermore, we were able to demonstrate that different types of joint diseases are to be found in patients suffering from psoriasis. In the great majority of cases it is the chronic inflammatory type, known as rheumatoid polyarthritis, but occasionally chronic degenerative arthrosis (osteoarthritis) occurs. The latter fact has been confirmed also by Jeghers and Robinson (1937). In one instance it was an angioneurotic hydrops intermittens of the joints (hydrarthrosis) that was found associated with psoriasis in several members of the family, one of them presenting in addition an inflammatory deformative arthritis (rheumatoid polyarthritis). Intermittent hydrarthrosis was encountered also in two of three cases of psoriatic arthritis reported by Garrod and Evans (1924). The pedigree and abridged history of our family have been reported by J. Bauer (*Constitution and Disease,* 1945). Discussing constitutional biological inferiority of organs and tissues generally, and of bones and joints particularly, our observations were commented upon on page 38 as follows: The only thing we know about the etiology of psoriasis is its hereditary occurrence. That all kinds of polyarthritis are frequently found in several members of a family is well known to experienced physicians. (J. Bauer, 1924). An observation published by Marinesco and Allende (1932) illustrates this fact in a particularly instructive way. Two brothers and one sister developed in the first years of their childhood a deformative type of infective chronic polyarthritis. There is no doubt that the joints were a constitutionally weak point in this family and were, therefore, highly predisposed to the occurrence of bacterial infections.

Thus, psoriatic arthritis should be interpreted as a manifestation of a combined abnormality of at least two genes, one accounting for the psoriasis, the other for the constitutional predisposition of the joints to various types of diseases. Whether or not a linkage of these two genes must be assumed is open to discussion.

15. It must be kept in mind that the lack of traceable heredity or familial occurrence of any condition in a particular person does by no means rule out its genetic causation. Recessivity of a hereditary trait, its polyhybrid character, the relatively small size of human families and the limitation of our information about previous generations make the statement "non-hereditary" futile. This is common knowledge to geneticists but is not sufficiently evaluated by many clinicians.

16. There is no demonstrable heredity of either psoriasis or rheumatoid polyarthritis—or, more precisely, of a hereditary tendency (predisposition) to either one of these diseases—in our particular case. No further conclusions can, therefore, be drawn on the nature of psoriatic polyarthritis from our present observation.

Summary

1. The case of a thirty-eight year old woman is reported who for the last ten years developed chronic atrophic rheumatoid polyarthritis associated with splenomegaly and severe neutropenia (Felty's syndrome). Splenectomy resulted in complete restoration of the abnormal blood picture (including eosinophilia) but did not prevent the rheumatoid polyarthritis from taking its usual, intermittent and progressive course. Four years after splenectomy an eruption of psoriasis vulgaris occurred and justified the diagnosis psoriatic polyarthritis.

2. It is assumed that Felty's syndrome is but an extreme degree of hypersplenism that is not infrequently encountered in chronic infectious (rheumatoid) polyarthritis. This hypersplenism is clinically identical with Wiseman and Doan's "primary splenic neutropenia". Etiologically, however, it is different in that it is not "primary" but secondary to the mild infectious process causing rheumatoid arthritis.

3. Hence splenectomy cures patients with Wiseman-Doan's disease and restores the leucopenia in Felty's syndrome but does not significantly alter the course of rheumatoid polyarthritis which is the basic pathological process of Felty's syndrome.

4. There had been considerable eosinophilia in our patient previous to splenectomy. It gradually disappeared thereafter. In this respect our case seems to be unique.

5. The coincidence of psoriasis with rheumatoid polyarthritis has been interpreted as the result of a genopathy that involves abnormal genes accounting for a hereditary (constitutional) predisposition to both the articular disease and psoriasis. This interpretation is based on previous studies and cannot be inferred from the present case report.

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ADDENDUM: J. Zimmer (*Acta Med. Scandin.* 120, 543, 1945) reported the occurrence of Felty's syndrome in two sisters and stresses the importance of an endogenous constitutional factor in the etiology. Splenectomy had a striking therapeutic effect.

INHALATION OF CARBON DIOXIDE IN THE TREATMENT OF RHEUMATOID ARTHRITIS

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The encouraging results of a preliminary study and report made in 1940 (1) in collaboration with Arthur Locke, led me to develop a course of treatments administered during the ensuing five years on a scale sufficiently broad to permit the formulation of certain conclusions as to the effectiveness and permanency of the treatment of rheumatoid arthritis, with inhalations of carbon dioxide. This present report is based upon a study of eighty-two patients treated between June 1938, and March 1944.

Eighty-two cases of the rheumatoid or atrophic type of arthritis were studied and treated. In two of these cases, the patients were afflicted with Marie Strumpell's disease. The ages of the eighty-two arthritic patients ranged from fourteen to seventy-five years. There were fifty-one women and thirty-one men. The duration of the disease at the time of treatment varied from forty days to thirty-seven years. Severity of the disease ranged from mild to total disability, with marked deformities and ankylosis of the joints; twenty-six patients were disabled but ambulatory; seventeen were bedridden, and thirty-nine were able to do more or less work or to attend to minor household duties. Two cases were of the palindromic form of arthritis and four were accompanied by psoriasis. All patients treated had received previously some form of treatment or combination of treatments, without substantial relief. Such treatments, singly or in combination,

included physiotherapy, nonspecific protein therapy, fever therapy, deep x ray therapy, large doses of vitamin D, and gold treatment. A number of patients had undergone dental extractions and tonsillectomies, without appreciable benefit.

Mode of Administration

Inhalations were administered by a Heidebrink Junior anesthesia machine calibrated for the use of carbon dioxide and oxygen. The breathing bag was filled with oxygen which the patient was instructed to breathe for one minute. The flow of oxygen to the breathing bag was cut off and carbon dioxide was permitted to enter the bag while the patient continued to inhale the mixture, until breathlessness and warmth, and in some cases, dizziness occurred. An interval was allowed the patient, from two to five minutes, following which the foregoing inhalation administration was repeated. A complete daily treatment consisted of this dual inhalation period. Treatment by this procedure was carried out daily for a maximum of forty-eight days.

Clinical Course During Treatment

The patients reported, with few exceptions, that immediately after the first treatment there was noticeable relief from muscle spasm, increased range of movement of the joints involved, and some relief from pain. Particularly noticeable was the fact that patients who had not been able to close their fists completely before treatment were able to do so after the initial inhalations. The duration of the improvement resulting from the first week's treatment was from three to twenty-four hours.

During the second week of treatment the increasing improvement in the patient was usually signalized by a marked reduction in pain, increased range of motion in the joints, reduction in swelling about the joints, increased appetite, greater ability to sleep, and improved appearance and morale. Beginning about the tenth day, or shortly thereafter, it was noted that, despite the lessening of joint pains, some patients complained of muscular pains and soreness. This usually lasted for a few days, disappearing and recurring at varying intervals. This condition was particularly evident in the severe cases with flexion deformity and muscle atrophy, and in all severe cases recurred periodically up to three to four months following conclusion of treatment. Muscle soreness was of infrequent occurrence in the milder cases.

Markedly tender and painful areas appeared medially and laterally about the knee in cases where these joints were involved. Relief was effected by injecting sterile normal saline solution subfascially into the tender spots. This procedure was required in severe cases until tenderness about the joints had disappeared. No physiotherapy or medication was given during the course of treatment. Patients were advised to take salicylates as desired for pain. No restrictions were placed on diet or alcoholic consumption.

Inhalations of carbon dioxide were not continued beyond eight weeks. Where deformities were present orthopedic treatment was given, but milder cases required no further treatment. Fibrositis about the joints was treated with subfascial injections of normal saline solution into the tender spots. Patients in whom the foot was involved, especially those with sunken metatarsal arches, were fitted with arch supports.

Results of Treatment

The features of improvement during the first two weeks' treatment, noted previously, were more pronounced at the completion of the course of treatment. A follow-up from one to four years after conclusion of treatments was made in each of the eighty-two cases. A classification of the results showed: nine (11 per cent of total), unimproved; five (6.1 percent), recurrence of symptoms; five (6.1 percent), improved; sixty-three (76.8 percent), completely free of symptoms. Included in this last group were two cases of Marie Strumpell's disease.

Conclusions and Summary

The inhalation of carbon dioxide and oxygen, as described, is hereby presented as a new form of treatment for rheumatoid arthritis. It is harmless and has the merit of being easily administered.

Indications of improvement appear early in the treatment; they are definite and easily recognized.

Seventy-seven percent of the patients, who successfully responded to this treatment, had no recurrence of symptoms and remained well generally. This group included two cases of palindromic arthritis, as described by Hench, and two of Marie Strumpell's disease, in which the disappearance of symptoms was complete and without recurrence.

Citation of Specific Cases

CASE I.—B. B., thirty-two years old, a laundry truck driver, had suffered from severe arthritis for four years. All joints of the extremities were involved, with deformities and total absence of motion in the joints. Psoriasis was a complication. The patient had been bedridden for two years. The pain was extremely severe and he was unable to feed himself. Treatment consisted of twenty-four treatments, beginning June 2, 1938, followed by physiotherapy and muscle training. Result: Freedom from pain and swelling of joints; motion in joints that were not ankylosed was regained and the patient was able to walk without assistance. The psoriasis completely disappeared. There was a gain in weight of thirty pounds.

CASE II.—E. K., a male, thirty-eight years old, a crane operator, had suffered from arthritis for fourteen years. The patient also suffered from Marie Strumpell's disease, and anterioposterior curvature of the spine with stiffness of the neck and pain in the back, shoulders, knees and ankles. At the beginning of the treatment the patient was able to work only two days a week. After two weeks of daily treatment he returned to work. There has been no recurrence of symptoms.

CASE III.—M. D., female, thirty years old, a housewife, had suffered from arthritis for sixteen years. There was limitation of motion in all joints, accompanied by severe pain and inability to walk without assistance. Psoriasis also existed. She had previously received virtually all known forms of treatment, including gold injections, without relief. Treatment consisted of a full course of forty-eight treatments, which were started on March 14, 1942. The patient is now totally free of symptoms and is doing her own housework.

Case IV.—M. C., female, thirty years old, a housewife. The patient had suffered from arthritis for four years, with multiple joint involvement including the temperomandibular joints. She had been bedridden for one and a half years. Treatment was begun on January 8, 1940, continuing through forty-six treatments. She made a complete recovery, and in October, 1941, gave birth to a child. She now is doing her own housework.

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THE TREATMENT OF LEG ULCERS WITH PRESSURE BANDAGES

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Ulcers of the leg are in most cases due to phelebitis in the deep veins of the leg. Varicose veins are rarely the cause of leg ulcers.

From a therapeutic point of view it is unimportant which germs cause infection of the veins and subsequently leg ulcers, as nearly all microbes have a tendency to infect the endothelium of the veins (phlebotropism).

In a paper on the syndrome and treatment of phlebitic leg ulcers I (1) stressed the treatment of latent phlebitis in the deep veins with pressure bandages as originally suggested by Fischer (2) for the treatment of phlebitis.

In another paper on the differential diagnosis between varicose and phlebitic leg ulcers I (3) pointed out that the diagnosis of the latent infection in the deep veins is made easy by palpation of the tibial veins on certain points. These points (Figs. 1 and 2) were described by Leibholz (4) in a paper on Meyer's pressure points as the most reliable test for latent phlebitis. Henschen and Becker (5), Schmidt (6, 7), and Koehler (8) confirmed Leibholz's opinion.

Varicose veins are usually defined as enlarged, superficial veins due to weak connective tissue.

I consider most enlarged superficial veins as detour veins which compensate for the impairment of the venous return in inflamed deep veins, consequently as a symptom of phlebitis in the deep veins. Detour veins, therefore, must be regarded as a wise compensatory measure of nature.

I (9, 10, 11) have warned repeatedly against the obliteration of enlarged superficial veins in the presence of phlebitis of deep veins, as such methods enhance the impairment of the venous return, and (12, 13) have described the production of phlebitic ulcers and phlebitic eczemas by such illogical treatment. I always treat the deep phlebitis with pressure bandages until the deep veins do not react with pain on deep palpation. I consider a vein healthy when it is not sensitive to pressure. Healthy veins (e.g., dorsal hand veins) can stand a great deal of pressure without pain.

After the deep veins are normal in their function, detour veins become superfluous and can be obliterated.

The differentiation of varicose and detour veins is important in the treatment of congestive eczema and ulcers of the leg. If the eczema or ulcer is caused by inflammation of the deep veins, the logical treatment is treatment with pressure bandages which decongest the leg.

If the physician deals with the relatively rare varicose ulcer or varicose eczema, then obliteration of the varicose veins will bring results.

H. Fischer (2) published his method of treating phlebitis with pressure bandages in 1910. His aim was to eliminate embolism and progressing thrombosis. By applying a strong and even pressure around the leg to a point above the inflamed vein, he succeeded in compressing the dilated veins, thereby restoring function of the valves and normal circulation. The pressure also promotes the absorption of existing thrombi and prevents their detachment from the walls of the veins. The restoration of the circulation prevents formation of new thrombi and removes the swelling. Fischer emphasizes that the action of his pressure bandage is greatly increased by walking, because the contraction of the muscles empties the veins (that have been compressed sufficiently by the bandage to restore the function of the valves) in the direction of the heart, thereby promoting circulation.

Fischer's treatment was rather cumbersome. I have simplified Fischer's treatment considerably by the combination (contura and pressoplast) pressure bandage, which has been described in this Journal (14).

Besides the *vis a tergo* and the negative pressure in the thorax the muscular contraction is the most important factor in the venous return. The muscle fibers act as pumps, compressing and emptying the intramuscular capillaries and venules, thus propelling the blood into the larger veins. This function, according to Henderson (15), is further aided by the associated increase in intramuscular pressure.

The effect of muscular contraction on the venous return is seen every day in bloodletting from the elbow veins. When the patient opens and closes his fist, the forearm muscles are contracted and exert pressure on the underlying veins.

I applied an elastic pressure bandage from the hand to the elbow and could demonstrate that the velocity of the bloodletting was markedly increased by this measure. When the forearm muscles contract without the pressure bandage, much energy is lost into the empty space. The application of the pressure bandage concentrates all the energy of the contracting muscles on the underlying veins and promotes the venous return considerably.

Ceelen (16), in his paper on polyphlebitis, has proved pathologically that the endothelial proliferation interferes with the venous return. He removed a vein by biopsy from the calf of the leg. Levin and Bucy (17) confirmed Ceelen's findings.

According to Greifenstein (18) Kaufmann found the

inner lining of an inflamed vein sometimes ten times as thick as the endothelium of a normal vein.

Inflammatory phlebostenosis produces increased venous pressure in distal parts, especially in the capillaries. This results in filtration edema. The finding of a high percentage of proteins in the edema fluid has been interpreted by Zimmerman and de Takáts (19) as a sign of endothelial damage due to anoxemia and increased permeability of the capillaries.

FIG. 1.—Pressure points for the diagnosis of phlebitis.

Venous congestion in any tissue causes local asphyxia, as the arterial blood supply is also decreased in a congested area. Edema fluid interferes with the normal exchange of oxygen between the blood stream and the tissues, and with the removal of the various end products of metabolism. Decongestion of the legs with pressure bandages removes stagnant tissue anoxia. This seems to be the most important factor in the speedy healing of phlebitic leg ulcers with pressure bandages. The main object of the pressure bandage treatment is the removal of the stagnation of blood and lymph in the involved limb. Decongestion of the lymph exerts a beneficial effect on the permeability of the capillaries.

According to Zimmerman and de Takáts (19), increased venous pressure results in the elevation of the capillary pressure. These authors claim that, as the result of the increased infiltration pressure, there is greater than normal movement of fluids, rich in protein, from the vessels into the tissues, thus decreasing the effective osmotic pressure of the blood and favoring even greater filtration into the tissue spaces. This protein-rich fluid is an ideal medium for fibroplastic proliferation, and if it remains in the tissue spaces for any length of time will provoke diffuse fibrosis of subcutaneous tissue. This reaction may be responsible for the fibrosis and induration of tissue surrounding phlebitic ulcers.

According to Ochsner and Bakey (20) there is a diminution in the flow of lymph coincident with the circulatory disturbances in the blood vessels. Normally the lymphatic vessels play a definite rôle in the removal of fluid from the tissues. However, when the venous circulation is impeded, the system becomes overburdened, and hence an incompetency of the valves develops. Another factor which contributes to a stasis of fluids in the lymphatic vessels is the diminished arterial pulsations due to the associated vasoconstriction. These arterial pulsations ordinarily help to propel the fluid away from the tissues by means of their pumping effect upon the thin-walled lymphatics.

As a result of the greater capillary filtration produced by the elevated capillary pressure, the tendency toward an increased capillary permeability due to anoxemia, and the slowed lymphatic circulation, there is outpouring and retention of fluids in the tissue spaces. With the accumulation of proteins in this perivascular fluid, a vicious circle is set up, for, as the osmotic pressure approaches that of the blood in the capillaries, absorption of the fluid into the vascular tree is prevented and edema forms.

The pain in phlebitic ulcers is probably due to the pressure on sensory nerves within the congested tissue. Decongestion relieves pain usually rapidly.

Decongestion with pressure bandages removes the stagnation of blood and lymph in the involved extremity. An improvement of the capillary circulation follows, which reduces the factor of anoxia. The abnormal filtration of fluids becomes less marked and the edema finally disappears.

Recurrences of phlebitis are frequent, especially if the patient has to stand a great deal during his occupation. The valves, after they have been inflamed once, lose part of their elasticity and are apt to lose part of their function. Any organ infected once becomes a *locus minoris resistentiæ*.

But the most important factor for recurrences of phlebitic ulcers is a "feeder" in the form of latent jugular phlebitis which usually has its origin in the oral cavity. Focal infections in the teeth and tonsils spread by way of the small connecting veins into the jugular veins and cause here a secondary focus. Klinge (21) believes that jugular phlebitis may be responsible for polyphlebitis in the peripheral veins in a sensitized body, especially in an area with venous congestion.

Migounov (22) was able to produce a severe thrombophlebitis in a sensitized rabbit by injecting antigen into the stagnant blood of a doubly ligated vein.

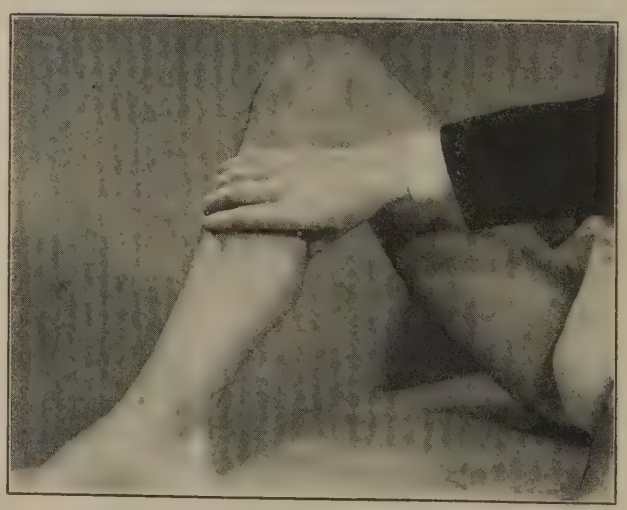

FIG. 2.—Testing pressure points in the leg.

Knepper (23) stressed the importance of sluggish circulation in the production of allergic reactions.

Since blood-borne toxins generated in an oral focus can cause peripheral phlebitis on an allergic basis in a sensitized body, it is obvious that oral focal infections must be removed.

Of special importance are infected tonsil stumps. My experience with infected tonsil stumps is based on the treatment of over 350 phlebitis cases in which infected tonsil stumps were diagnosed and removed. Infected tonsil stumps often escape the attention of the examining physician. The scar tissue may look absolutely normal in some cases while in other cases small islands of lymphatic tissue may be observed in the tonsillar area. The diagnosis of infected tonsil stumps is made by finger ball palpation on the scar tissue which elicits severe pain. External palpation of the tonsillar bed for indurated tissue is best accomplished when the patient relaxes his neck muscles by bending his head downward and slightly to the side which is to be examined.

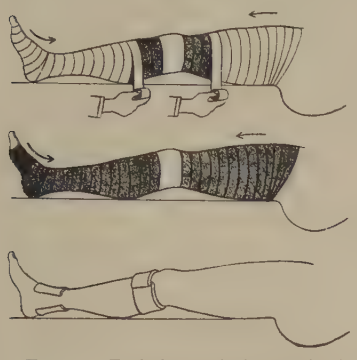

Fig. 3.—Technique of the application of the combination pressure bandage.

It is hard to believe how few tonsillectomies are made completely. Vogel (24) states in his book on focal infection of the tonsils that complete tonsillectomies are exceptions.

Pathological examinations of tonsil stumps reveal much proliferative indurated tissue and pus. Bacterial cultures reveal in most cases streptococcus and staphylococcus infections. As scar tissue prevents drainage of infected tonsil stumps, I consider them more dangerous than ordinary infected tonsils. Beck (25) considers infected tonsil stumps as a starting point of septicemia. Endophlebitis in the tonsillar veins spreads by continuity directly into the jugular vein and thus produces jugular phlebitis. Complete excision of infected tonsil stumps is an absolute necessity to clear up peripheral polyphlebitis.

As jugular phlebitis usually produces phlebitis in the deep veins of both legs ("horseshoe" phlebitis), it is necessary to treat both legs with pressure bandages if only one leg shows an ulcer, since the latent infection in the apparently healthy leg may feed the infection in the leg with the ulcer. If the "feeders" of infection in the venous system are completely removed, the healing of the phlebitic leg ulcer is usually thorough and lasting. The patient has to be warned to avoid standing and to walk quite a deal every day.

Technique of Combination Pressure Bandage

The technique of the combination pressure bandage is simple. The patient lies on a flat table. After covering the ulcer with a suitable ointment and a piece of gauze, the ankle, Achilles tendon, and the region directly below the knee are protected, as shown in Fig. 3a. Then the contura bandage is applied loosely, and over it the pressoplast bandage is applied with strong and even pressure, as shown in Figs. 3b and 3c. Both bandages cover the foot and leg from the toes to the knee, and both are applied in the direction of the heart.

In treating the thigh the bandages are applied in the direction of the knee, starting as high as possible near Poupart's ligament, and ending directly above the knee, as shown in Figs. 3b and 3c. The pressure must be firm and even. If it is too strong, the patient will complain about severe pain almost immediately after application of the bandage. Then a new bandage must be applied under less pressure. During the treatment the patient must walk as much as possible, not less than three miles daily, and must avoid standing. The bandage is changed at first every third day, and later, when the swelling has subsided, twice weekly. Generally speaking, the bandage must be changed when it becomes loose.

After the ulcer has healed, the treatment with the combination pressure bandage must be continued until the latent phlebitis in the deep veins has cleared up completely, in order to avoid recurrences.

The proper time to discontinue the treatment with pressure bandages can be easily determined by testing the deep veins of the leg at the pressure points (Meyer's pressure points) by deep palpation, as shown in Figs. 1 and 2. If the veins are still sensitive to pressure, they are still inflamed, and the treatment must be continued. If they are no longer sensitive to pressure, the latent phlebitis in the deep veins has cleared up, and the treatment can be discontinued.

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200 WEST FIFTY-FOURTH STREET

SITOPHOBIA OF ENTERIC ORIGIN*

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Sitophobia, meaning fear of food, is a condition which may last a long period of time and, if not successfully treated, may endanger life. It is therefore natural that this subject should command the full attention of the practitioner.

When I first used the term sitophobia I was not aware that Guislain (1) had already employed the same word to designate the refusal of food which is so often encountered in cases of melancholia and in the insane. For this condition, however, the word introduced by Sollier (2), namely, *sitieirgy,* meaning refusing food, seems to be more appropriate. For, in the insane, the patients do not want to eat, not because they are afraid of the food, but for different reasons; either they are in a state of depression, unwilling to do anything, even eating, or they have suicidal ideas, or they have illusions that the food may be poisoned, etc. I may, therefore, be permitted to reserve the term sitophobia for those conditions only in which there is distinct fear of taking food on account of resultant bad consequences. Sitophobia in this sense has nothing to do with the insane and is found in mentally perfectly sound people.

In my paper, "The Diet of Dyspeptics," (3) I have already alluded to the importance of sitophobia and its management. While in this article sitophobia was spoken of as occurring in cases of disorders of the stomach, principally those accompanied by pains, of late I had the opportunity to observe the same condition in persons who had no gastric symptoms whatever and in whom "the fear of food" was due to some intestinal difficulty. I shall, therefore, in this paper speak of the latter group of cases, or of "sitophobia of enteric origin." A good illustration of the importance of this condition will be found in the following case:

William H., twenty-eight years old, a bookkeeper, had always been well up to two and a quarter years ago. At that time he became constipated, which condition gradually grew worse, occasionally alternating with diarrhea. Off and on, mucus was observed in the stool. His appetite was good, but he suffered at times from headaches and disturbed sleep. The patient consulted me for the first time in March, 1900, and was given magnesia usta in conjunction with ferratin and olive oil enemas, after which he improved for awhile. He went to the country, where his condition again became worse. On his return to the city, in August, he was given podophyllin pills, which, however, did him no good. He then went to another physician, who ordered some medicine and injections of water.

These remedies not proving of benefit, the patient again resorted to the podophyllin pills and injections every day, using both these means from September, 1900, to March, 1901. Often he would go without a movement of the bowels for seven to ten days. During all this time he ate much less than he was previously accustomed to, because he was afraid "that he would get entanglement of the bowel." His weight steadily grew less, and dropped from one hundred and thirty-eight to one hundred one and a half pounds. He became exceedingly nervous, irritable and hypochondriacal. Of late he felt so weak that he had to abandon his vocation. At this time (March, 1901) he again consulted me, looking very badly, and being hardly able to walk. After undressing he looked almost like a skeleton, every bone being visible, not unlike a roentgen picture.

On examination, besides this extreme condition of emaciation, pronounced anemia was found. The thoracic organs did not present anything abnormal, while the abdominal cavity appeared somewhat caved in (almost trough-like) and showed an "apparent tumor," situated above the navel to the left of the spine. There were no areas painful to pressure. The urine contained neither sugar nor albumen. The knee reflex was present.

The diagnosis of emaciation due to inanition without any organic trouble was made and the patient treated accordingly. He was advised to eat six times a day; a rectal injection of a pint of warm olive oil was ordered every night, and he was given internally calcined magnesia and ferratin. He was told to eat plain, wholesome food, plenty of fruit, bread, and at least a quarter of a pound of butter daily. He immediately improved; his bowels became regular, and hardly a month after he weighed one hundred and twenty-eight and a half pounds, having gained on an average almost a pound every day. He now looks the picture of health, has ruddy cheeks, feels strong, and is able to take long walks without any fatigue.

Another case not unlike the one just described is the following:

Joseph W., twenty-three years old, a ladies' tailor, had been suffering for the last two years with digestive disturbances (fullness after eating and constipation). Six months ago he consulted me, complaining principally of severe constipation. He was given tincture of rhubarb, but his condition did not seem to improve much. The appetite was not especially good and the constipation became more obstinate. He was afraid to eat much, as he believed the more he ate the more he would be constipated and the sooner he would have to

*Read before the New York Academy of Medicine, May 16, 1901, and reprinted from the *Journal of the American Medical Association,* June 15, 1901.

resort to a cathartic. He ate everything, but only in small quantities. He was also compelled to take a glassful of whisky in the morning on an empty stomach and two to three times during the day in order to be able to do his work. He gradually became weaker, and lately lost fifteen pounds. His weight at this time was one hundred and ten pounds.

On examination, the patient was found to be emaciated and pale. The thoracic as well as the abdominal organs did not reveal anything abnormal. The tongue was not coated, the urine contained neither albumin nor sugar, and the patellar reflexes were present. The diagnosis of habitual constipation with sitophobia was made and the patient treated accordingly.

In the two cases detailed above, the sitophobia developed as a sequel to obstinate constipation. The patients were afraid to tax the intestinal tract with much food, as it was apparently unable to dispose of even small quantities of the most delicate aliments.

I have, however, seen instances in which chronic diarrhea also gave rise to sitophobia. Of the many cases I have observed I will report only one.

Mrs. N. O., about thirty-three years old, had been complaining for the last four or five years of great flatulency and diarrhea. She had four to six movements daily and one or two during the night—about 3 or 5 a.m. The dejecta were either watery or mushy, and always contained a considerable amount of mucus. Before an evacuation took place there was always a great deal of rumbling in the bowels, accompanied by slight colicky pains and passing of flatus. Her appetite was fair and there was no discomfort after meals. The patient, however, was very careful in her diet, taking principally mutton broth, scraped beef and toasted bread, and of these very small quantities. She was afraid of aggravating her trouble by partaking of more food. She had constantly lost in flesh in the last two years, altogether about forty pounds. She felt weak, complained a great deal of dizziness, a dry sensation in her mouth and restless sleep, and was unable to attend to her household duties.

The physical examination showed that a condition of enteroptosis prevailed. The gastric contents did not reveal anything abnormal. The fecal matter contained some mucus and a considerable quantity of undigested food.

The diagnosis of enteroptosis and chronic enteritis was made. The patient was put on a liberal diet—salads, fruits and coarse vegetables excepted. She was permitted to eat everything. She was also instructed to partake of kumyss, and bread and butter between meals. Besides the diet, the patient was given tannigen (seven and a half-grains three times a day). Under this regime she steadily improved, gained considerably in weight, and her bowel trouble yielded to a great extent, although it had not entirely disappeared.

Remarks

In the observations just narrated the sitophobia was marked and had its origin in the belief that the bowel trouble might become aggravated by partaking of nourishment to some extent. Nor are these cases rare. Sitophobia of a moderate degree is almost an everyday occurrence in various intestinal disorders.

Having emphasized the fact that sitophobia is met with in enteric affections, it doesn't appear superfluous to describe its dangers and also its treatment.

While in conditions accompanied by diarrhea the avoidance of food may for a short while exert a beneficial influence upon the intestinal affection, it is quite different in most cases of habitual constipation. The latter condition becomes the more aggravated the less food is taken. The constipation growing more pronounced, the patient is still more afraid to partake even of the small quantities of food which he has hitherto managed to enjoy. Thus, there is a circulus vitiosus: constipation causing sitophobia, which of itself aggravates the former affection.

But even in diarrhea, with sitophobia causing an insufficient quantity of food to be ingested, there is, after a short interval of apparent improvement, a relapse. The deficient nutrition leads ultimately to an undermining of the constitution. The natural resources for combating disease are weakened; nervous symptoms manifest themselves. Thus the diarrhea quite soon is again as bad as ever.

Dangers of Subnutrition

Moreover, sitophobia, no matter what its cause, if left to itself is bound to endanger life. A person who habitually is taking an insufficient quantity of nourishment is slowly starving, and if there be no change in the mode of living, starving to death.

It is hardly necessary to dwell upon the symptoms which appear in this state of subnutrition. They are a host and hardly need any comment: general anemia, and then anemia of the brain, dizziness, dryness in the throat, extreme fatigue, insomnia, etc. Occasionally I have met with albuminuria, which promptly disappeared upon improving the nutrition.

Another important feature of sitophobia is the habit which the patient develops of eating minute portions. The condition which has led to sitophobia may have been remedied and thus the sitophobia as such may not exist any longer, still the acquired habit of eating very little may persist. This certainly can produce the same dangers to life as the original sitophobia.

Treatment

The patient must be made to eat sufficient quantities of food, no matter what is the underlying condition causing the sitophobia, and no matter how this is done. Sometimes persuasion alone is sufficient. Occasionally in very pronounced cases of subnutrition an ample diet can not be adopted at once, but must be arranged gradually, accustoming the patient to more nourishment step by step. In some instances various medicaments will be helpful in carrying out this plan, thus the bromides in nervous conditions, or codeine in painful affections. Sufficient nutrition is the foundation upon which to build the structure of health. The former lacking, no matter what treatment may be instituted, the structure will sooner or later collapse. If a solid foundation is laid by a sufficient diet, it is often quite easy to achieve perfect recovery. For, the usual means of treatment will then prove successful in eradicating the primary disease.

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THE GENIUS AND HIS BRAIN

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Is there something in the brain of the man of genius to which he owes his superior mental endowments? Can an anatomist, by carefully examining two brains, one that of a man of ordinary mental abilities and the other that of a genius, tell which is which? This is a matter which anatomists have considered for a great many years, and their search for the anatomical basis of genius has been a most interesting one through the years.

The first problem that was settled was that of weight. It was found that a heavier brain was by no means a more efficient one. Many men of genius had brains much smaller in size and lighter in weight than those of persons with just ordinary talents. The brain of Anatole France, for instance, was lighter in weight than the average brain of the average man, and yet from that brain came some of the greatest of modern French literature. His depth of learning was immense, but it did not require a very large or very heavy brain to hold it. On the other hand, some of the largest and heaviest brains have been those of persons of limited intelligence.

The second physical characteristic was that of configuration. Has the brain of the man of genius a special design? Are the fissures, for instance, deeper and more numerous? This was settled for the first time by Dr. Rudolph Wagner, and his findings have since then been confirmed innumerable times. Dr. Wagner acquired two brains for study. One was that of Gauss, one of the greatest mathematicians of all time, and the other that of an ordinary day laborer.

Dr. Wagner made a careful study of the fissures of both brains; he studied the depth of the convolutions, their number and patterns. They were practically identical in all respects.

It was somewhat later that anatomists and surgeons began to study particular portions of the brain in an attempt to locate the areas of mentation. The frontal lobes of the brain were thought by many to be intimately concerned with the intellectual faculties. The general belief was that the larger and more developed they were, the greater were the intellectual powers of their possessor. It was when anatomists began to study this problem in earnest that they found the frontal lobes of the brain were not the key to the problem. A careful study of the frontal lobes of the brain of the eminent psychologist and college president, G. Stanley Hall, and that of Sir William Osler, one of the greatest physicians of all times, each a genius in his field, and a comparison with the frontal lobes of the brains of men of ordinary mental endowment showed no essential differences whatsoever.

Operative procedures carried out on the frontal lobes of the brain have not resulted in any appreciable diminution of the intelligence of the patient. Dr. Fulton and his colleagues have extirpated large areas of the front portion of the brain in monkeys with no impairment in their intelligence. In a similar manner, other sections of the brain were carefully and minutely studied, comparisons made between men of genius and those of the man-in-the-street variety. There were no marked differences in the brain structure. Operative procedures have been carried out on all parts of the brain, and none of these have resulted in markedly diminished intelligence.

At the present time brain anatomists and surgeons are agreed that the secret of the genius's brain is not in the brain itself but in the size of the blood vessels that supply the brain. The brain coverings give one a better clue to a man's mental abilities than the size of the brain itself. The brain covering contains the arteries and veins which nourish the brain and a glance at the size and complexity of these arteries tell us more about brain power than the size, weight and architecture of the brain itself.

In 1926 Dr. Hindzie began a systematized study of the blood vessels of the brain and brain coverings in the brains of men of genius and men of ordinary brain power. He found real and marked differences. He discovered that the blood supply of the brain of those of superior mental endowment was richer and more complex.

The brain of the genius, in its structural characteristics, is essentially not very different from the ordinary brain. Its weight, size and architecture are not very different from the ordinary brain. The real differences are found in the brain coverings of the superior brain. These coverings or membranes are rich in blood vessels of magnificent calibre. The brain envelope of the half-wit, on the other hand, is poor in blood supply, and the blood vessels are small and rather constricted, and this permits only a limited supply of blood to the brain itself.

It has been conceded that the brain is by no means an isolated organ sufficient unto itself for effective and efficient functioning, but is dependent upon a great many external factors in the body. It receives stimulation from other organs, particularly those belonging to the endocrine system. Dr. Arthur O. Hecker has made a thorough and interesting study of the interrelationship of the brain and the ductless glands.

In cases of disturbed thinking, of which schizophrenia (split personality) is a good example, the primary manifestations occur in the brain itself, but in the main these are due to an upheaval in the function of the hypothalmic-posterior hypophysial adrenal medullary complex. In this particular instance, the proper functioning of the brain is dependent upon the pituitary body at the base of the brain and the adrenal glands above each kidney. These glands secrete substances which kindle thought as much as oxygen kindles and maintains a flame. A tumor of the thyroid gland in the neck will also exert a disturbing effect on the brain. In this instance overstimulation brings about confused thinking. When the tumor is removed the proper function is restored to the brain.

Brain students within the past few years have learned to regard conditions arising outside the brain as of great importance in affecting the brain itself. In a series of cases of brains of similar functioning equal-

ity, investigators have found that poor thinking was the result of deficiencies in the activity of the sexual and thyroid glands. These in turn were dependent upon the proper functioning of the anterior lobe of the pituitary. On the other hand, in men of genius, the pituitary gland was always found to be magnificently developed and always functioning to capacity. When this was the case, the sexual and thyroid glands were also at their highest peak of efficiency. The brain student now realizes that a look at a neighboring structure, the pituitary, often gives a better answer as to the mental endowment of a person than a minute examination of the brain itself.

The second gland concerned with superior brain power is the adrenal, a ductless gland far removed from the brain. There are two of these glands, one situated on the upper pole of each kidney. These glands are derived primarily from nervous tissue, and they secrete substances which are intimately bound up with brain function. In men of genius these glands are always fully developed and healthfully functioning. Their size and activity are an important clue to the brain of the man of genius. In the idiot they are puny and starved and poor in function; in the man of genius they are of more than average size and are constantly pouring out their chemical activators, so essential for efficient brain function.

So closely interrelated are the adrenal and the pituitary glands that if one becomes diseased the other soon follows suit. When the adrenals are healthy, the pituitary is healthy, and the brain is healthy. When one, through accident or disease begins to decay, so profound a disturbance is created that the brain begins to suffer almost at once.

The brain of the genius shows its superiority, not in the brain itself primarily, but in the structures surrounding it and upon which the brain depends for its proper functioning. Briefly, it may be stated that the brain of the man of genius is characterized by:

1. A rich blood supply, as seen in the brain coverings. The blood vessels of superior brains are abundant and of greater calibre than those in the ordinary brain.

2. The state and function of the pituitary gland, situated at the base of the brain. In the man of genius the pituitary is always fully developed and perfectly functioning. It is never diseased.

3. The state and function of the adrenals. These are always more fully developed in the man of genius. Their secretions are essential to kindling and maintaining superior mentation.

4. The state and function of the dependent endocrine glands, the thyroid and the gonads. In the man with a superior brain these glands are always in good working order. Their secretions enter intimately into the chemistry of cerebration.

Thus, the brain of the man of genius does not reveal his status in its structure but in other and related factors. It is for this reason that it is only within recent times that a real understanding of the secret of genius is possible.

183 Avenue O

THINKING AND PROBLEM SOLVING

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As a man thinketh, so he becomes. The chief difference in men lies in the way they think. If a man can reason, he is capable of thinking. If he reasons and thinks clearly, he is capable of solving problems. Life is full of problems. A dead man, a man who is unconscious, a feebleminded man, an insane person, or a person who is extremely neurotic, cannot think at all, can think very little, or thinks erroneously. A normal person can think well under normal or average circumstances. An intelligent person with special experience and education can think much better than others if he has at least normal emotional control.

The less developed and more abnormal individual permits his unconscious to do his thinking for him, and restricts to a lesser degree those suggestions or thoughts which enter his mind from free associations. He may even forget some of these free thoughts from the unconscious. However, if he does remember them, he makes little or no comparisons with other thoughts or experiences, cannot evaluate the thoughts and ideas in his memory, and cannot interpret them unless he brings into play conscious thinking.

On the other hand, conscious thinking is more or less hopeless unless there is a background of unconscious thinking. Just as dreams come from the unconscious, so do day-dreams, fantasies, and imagery. A constructive individual must permit his imagination to come freely from his unconscious. He must develop, evaluate and compare these free thoughts with other thoughts or ideas which come into his mind. He must then, consciously and deliberately discard some thoughts, re-evaluate and interpret others, and finally come to conscious conclusions. These conscious conclusions can be put into practice through directed thinking and deliberate action and can then be tested.

The normal man has many desires and wishes. Hence he has many problems, which deal with himself and with others. The more important the man, the more and graver may be his problems. A man with good personality and character strives constantly to solve his problems. A feebleminded, insane, or highly neurotic person constantly tries to evade and escape many problems. The normal person who thinks clearly solves many of his problems and welcomes new ones.

The intelligent person first recognizes that he has a problem. Then he defines clearly what his problem is and subdivides it into many smaller units. He then thinks of still more problems which may border on these. Finally he permits many suggestions to enter his mind, compares and evaluates them, and comes to one or several conclusions as the solution to his problem. He is then ready to test out the results. The weakling either does not see his problems, or doesn't understand them, tries to escape them, asks others to solve them, or muffs the proper solutions.

A person who does not recognize his problems or who attempts to solve them and fails in many of his solutions, is a failure in life. Many of these failures could have been prevented through the development of good personalities and characters in the homes, and by proper education, training, and guidance on the part of those who know. Last, but not least, many failures could have been prevented if family and friends had practised proper guidance, and had given the proper recognition and repeated encouragement.

If you want to help some one with his problem, see that the problem is clearly defined in his mind and that it is properly stated. Then, after some systematic reasoning, objectively classify and group the details and the good and weak points according to their common qualities and goals.

Encourage the individual to observe, experiment, and compare. Be sure that there is a definite purpose or goal in view, in order to test the truth of many suppositions and the validity of problems with their solutions. Avoid wishful thinking as one of the processes. Substitute for the solution of the problem the exact opposite of what you have in mind, and see how it works out. Ask the one you are helping (including yourself) what he has done with regard to the problem and what others have done in similar circumstances. Do not solve problems for others but help them reason, understand, and work out their own problems.

If the definition of the problem is understood and its various units isolated and defined, then a noble attempt has been made to solve the problem efficiently.

57 WEST FIFTY-SEVENTH STREET

INFLUENCE OF ESTRONE, PROGESTERONE, AND STILBESTROL ON GROWTH OF LUPINUS SEEDLINGS*

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In connection with my numerous studies on the phytopharmacology of drugs, that is, on the effect of such drugs on plant physiological test objects, it was deemed of interest to investigate the effect of the female sex hormones on such biological reactions (1, 2). Accordingly a large series of experiments were performed with such hormones on the root growth of Lupinus albus seedlings, according to a method which I have described in numerous papers published elsewhere (3, 4, 5).

The technique employed was briefly as follows: Seeds of Lupinus albus, large variety, were soaked over night in cold water. On the following day these seeds were planted in a medium consisting of finely ground sphagnum moss containing a suitable amount of moisture. Germination with fresh seeds was usually ninety-five to one hundred percent. When the seedlings had developed straight, definitely demarcated roots measuring thirty to fifty-five mm. in length, they were ready for use.

The seedlings were placed in hard glass tubes containing a plant physiological nutrient solution consisting of equal parts of distilled water and Shive's solution (6). Shive solution is a balanced medium containing definite quantities of diacid potassium phosphate, magnesium sulfate, and calcium nitrate. The growth of control seedlings was studied in such a hydroponic medium, consisting of equal parts of Shive's solution and distilled water. At least ten healthy seedlings were selected and their well demarcated straight roots were measured with a millimeter rule, and the plants then placed in the upright hard glass tubes containing the plant physiological solution. For the study of various drugs, chemicals, toxins, or other substances, a suitable concentration was dissolved in distilled water and an equal part of the Shive solution added. In this way a large number of drugs can be studied on a large number of seedlings simultaneously under strictly controlled identical conditions of temperature, light, etc.

I usually employ at least ten seedlings for each drug studied and each concentration of such a drug, and often several rows of ten seedlings each are employed. The whole outfit is allowed to grow in the dark, at a temperature of 60° F. for twenty-four hours, at the expiration of which time, the root lengths are again measured. The influence of unknown chemicals on the root growth is expressed by the *Index of Growth*, which is obtained by dividing the average growth of the seedlings in a drug solution by the growth of the control seedlings in plain water and Shive and expressed in percentages.

Therefore, the Index of Growth is $\frac{X}{N}$ x100.

Material Studied

In the present research the pure crystalline hormones estrone and progesterone were obtained through the generosity of the Schering Corporation. Inasmuch as these hormones are poorly soluble in water, the substances were dissolved in ninety-five percent grain alcohol and such alcoholic solutions were employed as a starting point for making very dilute solutions in plant physiological saline. A suitable compensation was made in the controls for the small amount of alcohol present in the final dilutions, and it may be stated at once that solutions of less than five-tenths percent alcohol in the plant physiological medium produce no appreciable effect on Lupinus growth.

In addition to crystalline estrone and progesterone, a third drug was employed in the present study. This was diethylstilbestrol, or stilbestrol for short, a synthetic drug which exhibits a definite estrogenic effect in various animals, closely resembling the action of estrone in that respect.

Results

Various concentrations of the three drugs were employed, ranging from 1:100,000 to 1:5,000,000. The most convenient concentrations used in this research were 1:100,000 or 1:200,000. In addition to the three separate hormonal drugs, a series of combinations or mixtures of the same were also examined.

In each experiment a row of at least ten seedlings

*Studies from the Division of Pharmacology, Sinai Hospital Laboratories, Baltimore, Md.

was employed for each drug, and each concentration of such a drug. In some experiments two or three rows of such seedlings, ten to a row, were employed. The subjoined table shows the results obtained in all the experiments with concentrations of 1:200,000.

Estrone was found definitely to stimulate root growth, while progesterone, inhibited it. Our experiences with crystalline estrone agree well with the horticultural experiments made with the follicular hormone by Schoeller and Goebel (7) and those by Neurath (8).

Table 1. Table of Root Growths

Estrone—1:200,000		Progesterone—1:200,000		Diethylstilbestrol—1:200,000	
Phytotoxic Index	No. of Rows	Phytotoxic Index	No. of Rows	Phytotoxic Index	No. of Rows
120 percent	3	85 percent	3	100 percent	3
112 "	3	78 "	3	108 "	3
136 "	3	73 "	3	92 "	3
120 "	2	69 "	2	91 "	2
135 "	3	84 "	3	91 "	3
120 "	2	69 "	2	91 "	2
101 "	2	60 "	2	71 "	2
116 "	2	78 "	2	108 "	2
108 "	2	77 "	2	93 "	2
103 "	1	88 "	1	90 "	1
108 "	3	77 "	3	93 "	3
111 "	3	66 "	3	88 "	3
116 "	2	78 "	2	108 "	2
Average 117 percent	31	Average 75 percent	31	Average 95 percent	31

It will be seen that estrone produces a stimulation of root growth in lupinus albus seedlings which, though not very marked, is quite definite. On the other hand, progesterone produced a definite inhibition of root growth. Curiously enough the action of diethylstilbestrol is also slightly inhibitory, although this synthetic hormone belongs to the estrogenic group. Even greater dilutions of estrone (1:2,000,000) produced stimulation of growth but progesterone did not.

In addition to the subjoined composite table, a number of protocols of individual experiments are here presented as illustrating the results usually obtained.

Protocols A, B, and C are examples of individual experiments with concentrations of 1:200,000. Protocol D reveals results obtained with the stronger concentration, 1:100,000. In protocols E and F are shown the results obtained with combinations of estrone and progesterone, of stilbestrol and progesterone, and of estrone and stilbestrol, respectively.

It will be noted that a combination of estrone and progesterone, yields a synergistic effect, that is, the combination produces a more toxic effect on root growth than the sum of the individual separate effects would lead us to expect. Similarly, estrone and stilbestrol also potentiate the toxicity of each other. On the other hand, a combination of stilbestrol and progesterone yie'ds an antagonistic action, that is, the combination is less toxic than the sum of the two individual components.

Comment

While the subject of female sex hormones is still not completely cleared up, it is generally conceded by endocrinologists that the estrogenic hormone and progesterone are two distinct chemical substances, quite different and usually antagonistic in their physiological properties. Such a contrasting effect has been noted in respect to estrogenic activity, in respect to their effect on the contractility of the uterine muscle, to their effect on myometrial response to the posterior pituitary hormone (Knauss reaction), to their effect on the ovipositors of the bitterling (Rhodeus amarus), etc.

The phytopharmacological data described in the present paper apparently fall into the same pattern.

It is interesting to note that stilbestrol, though resembling estrone in its estrogenic properties, differs from it as regards plant growth. This is not at all surprising or unusual from the viewpoint of pharmacology. While estrone and progesterone are both related to the

Table 2. Composite Table

		Concentration	Index of Growth	Rows of Plants	
A: Experiment, July 3, 1943					
Estrone		1:200,000	111 percent	3	
Progesterone		1:200,000	66 "	3	
Stilbestrol		1:200,000	88 "	3	
B: Experiment, July 8, 1943					
Estrone		1:200,000	108 percent	3	
Progesterone		1:200,000	77 "	3	
Stilbestrol		1:200,000	93 "	3	
C: Experiment, August 12, 1943					
Estrone		1:200,000	103 percent	1	
Progesterone		1:200,000	88 "	1	
Stilbestrol		1:200,000	90 "	1	
D: Experiment, August 14, 1943					
Estrone		1:100,000	102 percent	2	
Progesterone		1:100,000	55 "	2	
Stilbestrol		1:100,000	58 "	2	
E: Combination Experiment, August 18, 1943					
Estrone		1:200,000	112 percent		
Progesterone		1:200,000	78 "		
Stilbestrol		1:200,000	108 "		
Estrone plus Progesterone	each	1:200,000	72 "		(synergism)
Stilbestrol plus Progesterone	each	1:200,000	100 "		(antagonism)
F: Combination Experiment, August 20, 1943					
Estrone		1:200,000	111 percent		
Progesterone		1:200,000	74 "		
Stilbestrol		1:200,000	89 "		
Estrone plus Progesterone	each	1:200,000	83 "		(synergism)
Stilbestrol plus Progesterone	each	1:200,000	88 "		(antagonism)
Estrone plus Stilbestrol	each	1:200,000	103 "		(synergism)

sterols and are built around the phenathrene nucleus, diethylstilbestrol is chemically an entirely different body.

Summary

1. Crystalline estrone, progesterone, and diethylstilbestrol were studied on the root growth of Lupinus albus seedlings.

2. Estrone in concentrations of 1:200,000 stimulated root growth.

3. Progesterone in concentrations of 1:200,000 inhibited root growth.

4. Diethylstilbestrol was slightly inhibitory.

5. Combinations of estrone with progesterone and estrone with stilbestrol produced a synergistic action; while a combination of stilbestrol with progesterone revealed an antagonistic or neutralizing effect on their toxicity for root growth.

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Auscultation Over the Joints

A New Diagnostic Method

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Crepitant or rubbing tactile sensations felt over the articular surfaces, while in motion, may denote the presence of a dry, noneffusive, inflammatory condition in the joint. The recognition of such a state is easy as a rule. The palpating palms, placed flat over the joints, perceive this tactile sensation during both the active and passive movements of the extremities. As soon as the articular surface becomes eroded, disintegrated, roughened, or the cartilaginous surface becomes partially or totally destroyed, the smooth, even, and glossy surface becomes transformed into a rough, coarse, uneven and irregular one and upon movement crepitus or grates will be felt.

The most common locations of arthritis, in which these changes are demonstrated, are the knee and the shoulder.

I have found auscultation a more sensitive method than the palpatory. The stethoscope, placed over the knee or the shoulder or occasionally over some other joint, while in motion, will enable one to detect noneffusive, dry, inflammatory arthritic changes at an earlier stage, in a milder form of the disease, in a far greater number of cases, and in a more convincing way than hitherto has been the case through palpation.

This auscultatory method, which is more sensitive than the palpatory, is analogous to the diagnostic procedure as practised in pericarditis sicca or pleuritis sicca. The pericardial rub, or the pleural rub, is recognized primarily by the stethoscope and only in far advanced cases can the tactile sensation be transmitted to the palpating palms. Similarly, roughening changes, as noted over the articular surfaces of the joints, are best and earliest and most sensitively demonstrated by the auscultating ears. Only more marked changes can, in a less convincing way and in a less descriptive manner, be registered and recognized by the palpating hand.

In every case with positive palpatory findings the auscultatory result is *eo ipso* positive. In some cases of positive auscultatory findings the palpatory results are negative, though the subjective complaints and pain denote the actual presence of a pathological condition. In certain cases, even in the absence of pain, the auscultatory findings may be the only sign of any existing disease. Positive auscultatory findings in the absence of pain are not rare.

It is interesting to note that heretofore no textbooks have mentioned this method, although its usefulness and superiority is obvious. As soon as attention is called to this simple method of examination, it requires no further recommendation, because once, demonstrated, its superiority is established beyond doubt.

Summary

Attention is called to a simple and reliable method of examination, auscultation over the joints, during movements, a method hitherto not practised, nor described in the literature. The advantages of this method and its superiority over the tactile method have been emphasized.

49 EAST EIGHTY-EIGHTH STREET

Atypical Lichen Planus

Studies of a new skin disease, which has been named atypical lichen planus and is known to the soldier as one of the varieties of "jungle rot", were recently announced by the Office of the Surgeon General. The first Army reports containing descriptions of this disease, were submitted by two Army dermatologists in the Southwest Pacific, Major Thomas Nisbet, of Pasadena, Calif., and Lt. Colonel Charles Schmitt, of Pittsburgh, Pa., who believed that atabrine, the drug which proved of such exceptional aid in reducing malarial attacks, was probably the underlying cause of the disease. Army doctors emphasize that the possible relationship of atabrine to atypical lichen planus does not reflect upon the usefulness of atabrine for the treatment of malaria, as the skin disease appeared in only about two or three per thousand of those in the Southwest Pacific who took atabrine regularly for some months. It is apparently due in part to an unusual sensitivity to atabrine. Medical officers, however, recognize that many other factors are probably contributory. These include skin injuries and irritations of many kinds, excessive exposure to sunlight, profuse perspiration, dietary deficiencies, and emotional and nervous factors.

The type of skin lesions varies. The disease usually first occurs in itchy, oozing, reddish or purplish patches on the skin, which may remain the same for several weeks or may spread rapidly. Following the acute stage, the inflamed patches leave purplish or brownish areas and often cause a temporary closure of sweat glands with a consequent lowered heat tolerance. In some cases patches of hair are temporarily lost.

Editorials

Will There Be A Shortage of Doctors?

In his annual report to the president of Columbia University, Dean Willard C. Rappleye, referring to the repeated assertion that the war will decimate the ranks of the medical profession to a danger point, says that there is no need for alarm. Medical schools are operating now under an accelerated program which was agreed upon by the Army, Navy and Selective Service. The output of new graduates has thereby been increased a third, and it is estimated that in the six-year period from 1942 to 1948, ten thousand more doctors are in the making.

There are, to be sure, some objections to this speed-up procedure, the most important of which is that medicine cannot be a quick-lunch-counter concept. Time for absorption and digestion of medical knowledge is paramount. Not how much but how well must be the desideratum. It is not yet apparent whether the compression of four years' study into three will accomplish all that is desired, but looking back on the easygoing pace of the early 1900's, too much time was given over to special holidays and prolonged summer vacations. The pressure then was due to time wasted which had to be made up, and it seems likely that under present conditions, with practically no time wasted under socalled "vacation periods", the student is carried along constantly in the stream of daily acquisition of things medical, and is not too often interrupted by trivialities. A woman medical student in casual conversation when asked by this writer about "pressure", assured him that "it is easy." This came as a surprise indeed; for we remember days long past when one would crawl into bed with a feeling that the daily notes were not all "written up", or some pages of text remained still unread. The life of a medical student may be compared to that of a graduate student who is aiming at an earned Ph.D. One can do relatively little and "get by" the "finals", or he can branch out into by-ways of collateral reading or clinical observation in order to expand and extend the search for mental satisfaction to the full.

But to return to the "alarm" concerning "doctor shortage", Dean Rappleye says: "The attempt in recent months to create such alarm may have an unfavorable result. It would be unfortunate if the standards of medical education in the country were lowered or if new medical schools were created when there is no evidence that thoroughly qualified individuals have not normally been able to get into medical schools.

"The country needs not more but better doctors and the more effective use of its physicians in meeting the health requirements of the nation . . . The ratio of physicians in the United States to the population previous to the war was approximately twice that of such countries as England, Denmark, Switzerland, and an even higher proportion than existed in Germany, France, and the Scandinavian countries, all of which had reasonable adequate medical services."

For the men just coming out of service there will be "refresher courses". The first is a long-term full-time course in the basic medical sciences, chemistry, biology and the like, and certain special studies dealing with hospital administration, physical training, public health medicine and the like. It is possible that the University may consider such studies as part qualification for earned degrees.

The second type is planned for discharged medical officers who wish to "brush up" in one or more branches of medicine before going back to private practice. No university credits or certificates will be granted to this group.

There is also a third "rating" for Columbia graduates in medicine or for those graduates of affiliated hospitals who can spend from two to six months in a sort of "mental rehabilitation". Qualified discharged officers will have some two hundred choices in every branch of medicine. There will be advanced work at the Columbia Center, Presbyterian Hospital, the Goldwater Memorial Hospital and in Bellevue Hospital. Admission will be on the first day of each month.

The Columbia dean calls attention also to the growing trend toward specialization because of the tremendous field which no one person can hope to cover in its entirety. He also notes the expansion of industrial medicine and the opportunities which are opening for those who may be interested in public health work.

Strain

We have no way of measuring the effects of strains from minor and major physical ailments, from damage to tissue; from mental strain in all degrees, or from combinations of both types. For example: A man may fracture his leg and then worry about not being able to go to work. These strains are personal and individual and occur in all combinations and degrees. Then we have another group of strains which are so prevalent at the moment. The world is trying to regain its equilibrium after its most disastrous, destructive and costly war. Theoretically, we have peace but the strife and the quarrels go on in every segment of the world, in the conquered nations as well as in the victorious ones. That great body, the UNO, in its London meeting had its own sharp disagreements. In all parts of Europe and Asia there is the struggle for bread and shelter and the ideological struggles between radicals and conservatives. Throughout the world there is the struggle between socalled fascism and democracy.

Here in this country there is strife between labor

trying to live as well as possible in the face of rising costs and capital trying to maintain as much profit as they possibly can. All of these spell strain; strain for the individual and social strain.

We realise that man has always had to struggle but we wonder how many of these struggles can really be called progressive or for some real constructive end. The answer could only come from economists, statesmen and those who profess to know more about these matters than we do, but what we are concerned with is the health and well-being of humans, and we have more than a faint idea that most of the strain that we are enduring could well be avoided and that most of the strain that we are enduring is detrimental to the health and well-being of humans. We must assume that as long as the individual and small groups and large groups seek an immediate goal or advantage opportunistically and lose sight of the much deeper issues, the same bickering and rancor and strife and warfare in varying degrees will continue and the human will be the goat.

Alcoholism

The drinking of strong liquors is less frequent now than formerly, but the drinking of beverages containing alcohol is more common because more persons can afford these luxuries, if they are luxuries, than used to be the case. All liquors containing alcohol, however, are much milder than in bygone days. Many years ago the imbibing of strong drink was almost the prerogative of the rich and well-to-do, and in Britain and to a less extent in the United States, it was a frequent occurrence for diners to become intoxicated, some grossly so. It was the fashion. Fox and Pitt, for example, were drinkers of port wine to what would now be termed excess. Forms of alcohol poisoning were common while delirium tremens was more or less frequent. Alcohol was taken, and is now in some instances, in excessive quantities for a variety of reasons, social convention, for instance, and for its effect in producing a general sense of well-being and in most of its forms, its agreeable flavor.

This habit, which is too apt to grow on one, leaves its mark on direct descendants and in many cases on several generations. A family history of alcoholism and epilepsy, and of mental and nervous disease is common, not only among those who drink to excess, but among those who have a susceptibility to alcohol, and these diseases, or a susceptibility to them, may be transmitted to descendants. Heredity plays its part as does environment. They are persons, who, as a consequence of their mental attitude, whether their dispositions or temperaments be mainly inherited or acquired and cultivated, appear unable to grasp the bearing of the course upon which they have embarked.

The circumstances of an individual are of prime importance. Many seek in alcohol relief from mental worry, weariness of mind and body, and from pain. That alcohol in some persons has this effect cannot be denied, and the question of what is meant by excess is at once raised. An amount of exercise, food or sleep, which is not only adequate but necessary for one individual, may be wholly inadequate or excessive for another, and the same applies to alcohol. However, alcoholism may be said to be comparatively rare nowadays, although the war and the diffusion of money among classes whose members had little to spend before has made drinking more common. Moreover, the effects of the war on the human mind has rendered many prone to fly to alcohol for relief from mental anxiety and so on, but the acute stages of alcoholism by far are less frequent.

News Items

Biggs Memorial Lecture.—The annual Hermann M. Biggs Memorial Lecture will be given at the New York Academy of Medicine, Thursday, April 4th, by Laurence H. Snyder, Sc.D., professor of medical genetics, Ohio State University College of Medicine, Columbus. His subject will be "Medical Genetics and Public Health."

Harvey Lecture.—Colonel Stafford L. Warren, professor of radiology, University of Rochester, M.C., U.S. Army, delivered the fifth Harvey Lecture at the New York Academy of Medicine, Thursday evening, February 21st. His subject was "Radioactivity in Nagasaki".

Friday Afternoon Lectures.—Dr. Ephraim Shorr, associate professor of medicine, Cornell University Medical College, will deliver the final lecture in the twentieth series of Friday afternoon lectures at the New York Academy of Medicine, on April 5th. His subject will be "Metabolic aspects of renal stone formation".

Symposium on the Heart.—At a stated meeting of the New York Academy of Medicine, held on March 7th, two papers on the heart were presented as follows: "Dynamics of the major circulation", by Dr. Dickinson W. Richards, Jr., professor of medicine, College of Physicians and Surgeons, Columbia University; Dynamics of the lesser circulation, by Dr. André Cournand, associate professor of medicine, College of Physicians and Surgeons. A general discussion of the dynamics of circulation followed.

Medical Jurisprudence.—At a meeting of the Society of Medical Jurisprudence, held at the New York Academy, Monday evening, February 11th, Dr. Theodore J. Curphey, chief medical examiner for Nassau County, N. Y., discussed the medical examiner system versus that of coroner, and recited actual experiences of a medical examiner in determining the cause of death in relationship to crime and disease. His address was illustrated with slides and a general discussion followed.

Meeting of New York State Society.—The annual meeting of the Medical Society of the State of New York will be held in New York City, April 29-May 3. Dr. William Hale, Utica, is president-elect of the Society and will be installed as president.

Discussion of Atomic Energy.—At a meeting of the New York Roentgen Society, in affiliation with the New York Academy of Medicine, held on Monday evening, February 18th, the program was devoted to a discussion of atomic energy. Papers were read by Dr. Edith Quimby on the atomic bomb, and by Dr. G. Fallia on atomic energy and medicine.

Meeting of Plastic Surgeons.—At a meeting of the American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, held in Philadelphia on Feb. 28th, Dr. Chevalier Jackson delivered an address on "Plastic Surgery of the Larynx and Cervical Esophagus." Other speakers were Dr. David Myers, whose subject was "Missile Injuries of the Mastoids, Sinuses and Maxillofacial Structures", and Dr. John V. Blady, who discussed "Maxillofacial Surgery in Cancer".

Essex Medical College Approved.—The New Jersey State Board of Medical Examiners has renewed its approval of the Essex College of Medicine, which was granted in January 1945 when the College was established in Newark. The College has 127 pupils and the faculty consists of thirty members. Dr. Clarence R. O'Crowley has been named chairman of a new board of trustees appointed in January.

Moore General Hospital Designated Center for Tuberculosis.—Pending expansion of Veterans Administration facilities for the care of tuberculous patients, Moore General Hospital, Swannanoa, N. C., has been designated as a specialty center for tuberculosis. The large number of examinations at separation centers has led to the discovery of cases of tuberculosis at a rate temporarily exceeding the capacity of Fitzsimons and Burns General Hospitals and tuberculosis hospitals of the Veterans Administration.

Postgraduate Course in Chest Diseases.—It has been announced that a postgraduate course in diseases of the chest will be given under the auspices of the Illinois Chapter of the American College of Chest Physicians at Michael Reese Hospital, Chicago, Ill., during the week April 1st to 6th, inclusive. Doctors may follow this week's formal course with practical instruction in the fields of thoracic surgery, bronchoscopy, pneumothorax, bronchography, and other methods and techniques in the diagnosis and treatment of pulmonary disease. Further information may be secured at the office of the American College of Chest Physicians, 500 North Dearborn Street, Chicago, 10.

Lasker Foundation Awards.—Dr. Robert Latou Dickinson, one of the country's leading gynecologists and obstetricians, and Dr. Irl Cephas Riggin, state health commissioner of Virginia, were the recipients of the 1946 Albert and Mary Lasker Foundation awards for the most significant contribution to research in human fertility, and for meritorious public health service. The $500 awards were presented for the second successive year at the twenty-fifth anniversary dinner of the Planned Parenthood Federation of America, Inc., held on January 23rd. Dr. Dickinson has devoted more than a quarter of a century to furthering knowledge about human fertility.

Erection of New Army Medical Library Building Planned.—Plans which are now under way for the erection of a new building for the Army Medical Library and a request for funds will be included in the War Department estimate for the fiscal year 1947, scheduled to come before Congress. A board to review all matters relating to the new building has been set up and the members include: Brigadier General Raymond W. Bliss, U.S.A., chairman; Colonel Leon L. Gardner, M.C., director of the Army Medical Library; Colonel James E. Ash, M.C., director of the Army Institute of Pathology; and Lieut. Colonel James J. Souder, Sn. C.

Premedical Societies Unite.—Skulls, premedical society of Cornell University, on January 12th became affiliated with Alpha Epsilon Delta, national honorary premedical fraternity, upon their installation as the New York Alpha Chapter. The initiation of twenty-three active and five honorary members was conducted by Dr. Hugh E. Setterfield, associate professor of anatomy at the School of Medicine, Ohio State University, and national president of Alpha Epsilon Delta, and Dr. Maurice L. Moore, national secretary. Skulls was organized at Cornell University in 1927 under the auspices of Dr. James W. Papez, professor of anatomy, Cornell University Medical College, and with its installation became the thirty-fifth chapter of Alpha Epsilon Delta. Honorary members of the charter group are Dr. Papez, Dr. Howard B. Adelmann, Dr. Samuel L. Leonard, Dr. Perry W. Gilbert and Dr. LeRoy L. Barnes.

Fund for Alumni Hall Oversubscribed.—The campaign to raise $500,000 for Alumni Hall, one of the units of New York University's new $15,000,000 medical center, was brought to a close by a banquet on Monday evening, February 4th. It was announced that the Fund had been oversubscribed by $50,000, and citations for distinguished service were presented by Dr. Harry Woodburn Chase, chancellor of the University, to students and alumni who had been most active in the campaign. Alumni Hall will contain a five hundred-seat auditorium and the offices of the College of Medicine Alumni Association. It will be used for an educational program planned to meet the postgraduate needs not only of alumni but of all physicians in the New York area with the aim of developing a permanent affiliation between the academic and practicing branches of the profession.

Brazilian Army Surgeons Visit U. S. Army Hospitals.—Brigadier General Florencio de Abreu, Surgeon General of the Brazilian Army, with four members of his staff, arrived in Washington, D. C., recently. They have come to the United States to make an inspection tour of Army medical facilities here. Their itinerary included Walter Reed General Hospital, Washington, D. C.; Fort Sam Houston, Texas; Fort Bragg, N. C.; and Halloran General Hospital at Staten Island, N. Y. They also made an inspection of Army medical organization and procedures in Washington. Accompanying the Brazilian Surgeon General were: Colonel Alfredo Issler Vieira, chief surgeon, First Military Region; Lieut. Colonel Achilles Gallotti, executive officer, Office of the Surgeon General; Lieut. Colonel Arnaldo Serqueira, subdirector of the Army Medical School; and Captain Joao Cesar de Oliveira, general's aide.

Dr. Seidenfeld to Direct Psychological Research of Infantile Paralysis Foundation.—Dr. Morton A. Seidenfeld has been appointed director of psychological services for the National Foundation for Infantile Paralysis. In cooperation with the medical director of the National Foundation, Dr. Seidenfeld will inaugurate a research program on the psychological problems and needs of infantile paralysis patients, and will develop a plan for their psychological treatment. Basil O'Connor, president of the National Foundation, said that Dr. Seidenfeld's appointment would add an important new sphere of activity to the organization's medical program. Based on modern practice in clinical psychology, the projected work will widen the scope of National Foundation planning for the treatment of poliomyelitis patients, especially during convalescence, continuing care, and rehabilitation. The National Foundation's psychological services will operate through the organization's local chapters.

Plastic Eye Centers.—In keeping with the Army's program to establish sufficient plastic eye centers to supply the needs of patients requiring prostheses, Fitzsimmons and O'Reilly General Hospitals have been added to the list of general hospital centers. Other Army General Hospitals now producing plastic eyes are: Thayer, Birmingham, McGuire, Hammond, Barnes, Dibble, Newton D. Baker, Tilton, (also Waltham Regional Hospital), Rhoads, Halloran, McCloskey, Wakeman, Glennan, Cushing, Ashburn, Crile, Northington, Gardiner, Lawson, Walter Reed, Percy Jones, Brooke, William Beaumont, Finney, Harmon, and Valley Forge.

Closing of Army Hospitals.—Fourteen additional Army general hospitals, three annexes to general hospitals and four convalescent hospitals will be closed by March 31, 1946, according to present Army Medical Department plans. Out of a wartime peak of sixty-five general hospitals operated by the Army Medical Department, twenty have already been closed, and out of a peak of thirteen Army Service Forces Convalescent Hospitals, three have been discontinued. The closing of these fourteen general hospitals, three annexes and four convalescent hospitals will result in a reduction of approximately thirty-eight thousand beds in general hospitals and six thousand five hundred in convalescent hospitals.

Building Fund Campaign of the Federation of Jewish Philanthropies.—A total of $23,500,000 in contributions and pledges has been raised in the 1945-46 campaign of the Federation of Jewish Philanthropies of New York, according to a recent announcement. The five-month long drive, which sought a total of $30,000,000 for expansion, modernization and maintenance of the Federation's 116 affiliated hospitals and social service agencies, was formally closed on January 31st. Of the total raised, which includes estimates of gifts to be received before the close of the fiscal year on September 30th, $9,000,000 is to be used for current maintenance and the remainder, $14,500,000 for the Federation's first building fund in twenty-five years. The building fund will be spent in accordance with a plan now being developed on the basis of the community's health and welfare needs which include increased facilities in hospital care, child care and youth welfare, psychiatry, care of the aged and other health and welfare fields.

Personal.—Dr. Robert C. Page, New York, has been appointed general medical director of the Standard Oil Company of New Jersey, succeeding Dr. Willard J. Demo, New York, who becomes the company's medical consultant.

Alexander Zeissig, D.V.M., has been appointed veterinary consultant on rabies in the division of communicable diseases of the New York State Department of Health.

Dr. Jay Arthur Myers, Minneapolis, Minn., has been elected editor-in-chief and chairman of the editorial board of *Diseases of the Chest*.

Dr. Richard Kóvacs, New York, was guest speaker at the postgraduate course in physical medicine presented at the University of Texas Medical School, Galveston, March 4-7th.

Brigadier General George W. Rice, M.C., former assistant commandant of Carlisle Barracks, Pennsylvania, has been named Third Service Command Surgeon to succeed Colonel Frank P. Strome, who has retired.

Colonel Raymond O. Dart, deputy chief surgeon for the American Forces in the Western Pacific, who has received the Legion of Merit and the Bronze Star for his work in that theater, has been appointed assistant director of administration, Army Institute of Pathology, according to a recent announcement by the Office of the Surgeon General.

Colonel Karl R. Lundeberg, who recently returned from India, where he served as theater medical inspector and theater surgeon, has been appointed assistant chief of the preventive medicine service, Office of the Surgeon General.

Lieut. Colonel Oscar P. Hampton, Jr., M.C., recently returned from overseas where he was orthopedic consultant for the Mediterranean theater—formerly the North African theater—and has been assigned to the surgical consultants division, orthopedics branch, Office of the Surgeon General.

Lieut. Colonel William T. Smith, M.C., for the past year with the Hospital and Domestic Operations Division, Office of the Surgeon General, has been appointed chief of the administrative branch of that division, succeeding Lieut. Col. John R. Thompson.

Colonel Oramel H. Stanley, former commanding officer of the Hospital Center at Camp Pickett, Va., has assumed command of Halloran General Hospital, Staten Island, N.Y., relieving Brigadier General Ralph G. DeVoe, U.S.A.

Dr. Henry E. Meleny, Hermann M. Biggs professor of preventive medicine, College of Medicine, New York University, delivered an address on the diagnosis and treatment of malaria, Friday afternoon, February 15th, at the New York Academy of Medicine.

Joe W. Savage, of Charleston, W. Va., who was recently discharged from the Army Air Force with the rank of Major, has been appointed executive director of the National Foundation for Infantile Paralysis. Prior to entering the Army, he was executive secretary of the West Virginia Medical Association, editing that organization's medical journal and representing the association before the state legislature.

Dr. Robert S. Goodhart, Forest Hills, N. Y., has been appointed scientific director of the Institute for Vitamin Research, Inc.

VISION*

WILLIAM EDWARD RUTLEDGE, L.R.C.P.I.
Norwich, England

In the busy affairs of life we do not often realize that we live in two worlds each day and that what is termed the special senses keep us in touch with the world around us, the other being what we may call our own little world, although perhaps not so little as we imagine it to be. I shall try to elucidate in a small degree one of these channels which connect the two worlds together, namely, vision.

After a little thought we can realize what this word may mean, especially when we consider the powers that this faculty gives us. The eyes have been truly said to be the windows of the soul and that means more than what appears at first sight.

Let us consider for a short time the amplitude of the visual sense, how through the medium of a part of the body, one inch in diameter, the immensity of space can be reached even the length of space taking one hundred and forty million years for light to reach us, by the help of the telescope, how with ease we can with light as our aid conceive the sun which is ninety-two million miles away. We can also see the myriads of stars in far parts of the universe and stand with awe at the magnitude of the infinitesimal fraction of the firmament we observe. Then we can turn our attention to the smallest microbe seen magnified hundreds of times, with its wonderful powers to absorb food to keep it alive and produce families by the million in a short space of time.

Then also consider the exquisite beauties in nature, variations in color, movement, poise and other wonderful impressions through the visual apparatus.

But this is not so simple as it appears. I mentioned two worlds, I have hinted at a picture of the world we see around, but what about all the processes that take place within, the processes from the physical eye to the physical brain, from the physical brain to what we call mind, and many paths beyond to we know not where.

The art of seeing is indeed an art when we consider the picture of life before us, seen first by the lowest type of human intelligence and then the highest type of artistic genius.

> "A primrose by a river's brim,
> A yellow primrose was to him,
> And it was nothing more".

Some see a world of sombre color, of dark vistas and yawning chasms, of people without a future and without hope beyond the horizon. Others see beauty in everything, exquisite panorama of unending landscapes, beautiful colors depicting the work of a truly Divine Creator, a glorious sunset in the eventide of man's travels through this world.

Between these two extremes there are myriads of variation in the pictures, both material and mental seen through the physical and mental or spiritual eye. It is my desire that you keep these two aspects of vision in mind for the space at my disposal.

I would first of all wish to give you a fragmentary summary of the evolution of this faculty from the earliest stages in the simplest form of animal and even plant life up to the highly organized faculty found in man.

Evolution of Vision

One could probably cover a thousand grades in this pathway. Might it not also be possible to allow one's imagination to stretch forward to the races of the future when the human race has evolved, if it ever will evolve, to a thousand more steps towards the millenium time when man will have mastered the things material to such a degree that vision will become a thousand times greater in its capacity and pleasure giving usefulness.

This story begins with the primitive protoplasm in the one-celled organism or even in the various forms of plant life. The story from its earliest stages to the highly organized and delicate structure which gives man his predominance and his intellectual supremacy is indeed, at least to me, an entrancing epistle.

In the inorganic life we have an example in the photographic plate when light rays affect the chemical substance to some extent similar to the effect on the human retina. In the plant kingdom, as you know, most types turn towards the sunlight as if to catch a glimpse of the life-giving source in the orbit.

At a stage between plant and animal life the one-celled organism called paramecium, which has a light spot on its surface, travels towards the light being directed by this light absorbing area.

Referring back to plants, on certain grass seedlings there is a raised area almost like a lens which is sensitive to light. This is similar to certain lower forms of animal life having such an arrangement. The action, however, is different, as would be expected.

The ameba, also a one-celled piece of protoplasm able to absorb food and excrete the unwanted part, is capable of being frightened away from a beam of light. By protruding a piece of its surface in an ungainly way it tumbles itself into a safer position. It has, however, no semblance of an eye but evidently is aware of the presence of the dangerous rays of light.

Climbing up the scale to the multicellular species, in certain forms of earth worms where sight is not very necessary in their simple form of life there is the beginning of a more special form of eye. It consists of a few transparent cells, a little pigment at the base of each and a conducting fibre simulating in degree the specialized optic nerve in the human. Through this light passes, is absorbed by the pigment and an impulse is transmitted to the head or part of the body and so the worm is conscious, if this were possible, of light and shade to a low degree. In some forms of worms several very primitive forms of eyes similar to that mentioned above are scattered over the body. (I hope to refer later to a primitive eye in man which may be a remnant of this arrangement—the pineal body)

This type of eye in worms is considered to be the most primitive representative of the ordinary developed eye. I may state here that this is a one-celled or a few-celled channel for impulses to travel to a rudimentary brain or to no definite brain, whereas the ordinary human eye is a mosaic of millions of nerve channels to a human brain of many more millions of nerve cells.

*An address delivered before the Rotary Club in Norwich, Norfolk, England.

We may now take a step over millions of years to a higher species of life having a type of eye somewhat more complicated and, as we know, proud of its position in higher society and dominating its fellow creatures of the lower order. I refer to the insect family. These little wonders, which amongst other things can bewilder the individual by resting on the ceiling upside down, have what is commonly called a compound or facetted eye. This eye resembles a mosaic of eye points which in theory should represent hundreds of miniature eyes, each functioning separately and seeing not one but hundreds of pictures of the one object. Somehow in nature's perfect way of manifesting herself these pictures must be harmonized into one dim outline of the object in front.

I could go on with the various ways in which the many forms of life by vision try to interpret whatever picture of the outer world may be before them but space will not permit. It might be of interest, however, to make a few remarks on what is termed in the human the pineal body. This is said to be vestigial remains of a third eye in some species. A definite eye structure is said to be present in the lamprey and certain reptiles. This body is situated between the two eyes on the base of the brain and was said to be the seat of a "rational soul".

The interesting point, however, is that at some time or other at least some of the living creatures of the earth had a third or central eye looking upward. Whether or not man has at any time possessed a third eye looking towards heaven is a matter which I shall leave for you to think out.

Having seen that there is a gradual evolution of vision up the scale of animal life it may have struck you that in lower forms the eye is used in underground life, in worms, in the underwater life, fishes and in reptiles and quadrupeds to see mainly the earth in the process of finding their prey. When we come to the human you will notice the upward growth of the head with the eyes rising above the earth towards something higher. This is a significant fact, seeing that there is a long future ahead.

How the Human Eye Functions

From what has been said about the evolution of vision a few hints may have emerged suggesting how the human eye functions. A crude illustration is the camera which includes a diaphragm regulating the amount of light entering and a refracting lens or compound of lenses and a sensitive plate. In the human eye there is a complicated lens or system of lenses combined in one complex lens and the retina or sensitive layer of nerve cells which is the important end station of the visual structure. From each point on the sensitive layer an impulse, after stimulation by a pencil of light rays, is carried through a system of, first, nerve cells, then fibres, then cells again, through about three systems of connections before the impression of the object is received in the higher centres of the brain.

Little is really known of what really takes place along this line of impulse transport but we do know that electrical, chemical and structural changes take place when light strikes the eye. A bleaching process takes place which has been proved by exposing a frog's eye to the window bars, then immersing the eye from the frog in a solution of alum. The lines of the window bars can then be seen on the retina.

A mosaic of impulses received from the sensitive layer, each point stimulated affecting a nerve fibre, is carried along nerve paths to an area in the brain. From here various connections are made with other areas and probably the picture in the form of perhaps electrical impulses is amplified. It is then carried upwards to higher areas where certain functions alloted to this area come into play. From here other stations are connected up and so the brain does its share in preparing a complete image to present to the mind. What happens then in the immaterial part of our being one can only speculate. At any rate the eye cannot see without the brain, the brain cannot see without the eye or without the mind or intellect.

Color

I have not spoken of color—that quality which is not an attribute of the object, nor the light, nor the eye but defined by some one as "a physical phenomenon which constitutes a qualitative entity only in consciousness".

It is impossible to explain how one sees color, especially as theories propounded are many and variable. It is possible that different colors having different wave lengths produce different sensations on a selective substance in the eye. This in turn is interpreted by the brain. All these theories are linked up with the effect of light on the sensitive retina.

It is by means of light that all sensations of vision are transmitted to the brain. We take it for granted that when we look at an object well there it is, and that's the end of it, but little do we realize that there may be electrons and protons rushing about inside billions of atoms and molecules to transmit the sensation along the paths of nerve fibres, or that vibrations commonly called impulses are traveling at an incredible speed and linking up all sorts of stations and centres of the brain, in order that what we call a picture impression may be registered by mental processes in our consciousness.

To conclude this fragmentary paper on the material aspect of vision, I wish in a few sentences to give you a picture of vision as explained by an hypothesis put forward. There are two mechanisms associated with this sense.

Dual Mechanism of Vision

First, the vision associated with one set of nervous mechanisms in the eye called the scotopic sense. This is without color appreciation but has to do with light and movement and works in low illumination. This is, therefore, what might be termed night vision. The other mechanism is that which appreciates color and form and is more active in high illumination. This is particularly suited to day vision and is used for seeing detail to a high degree.

There exists, therefore, a duality in vision as in practically all forms of life. In fact, everything in the universe seems to have this duality.

When there are so many intricate and unseen forces working through such a small part of the human body, what can we say about the working of what might be termed the soul of humanity or the spirit of the people? All we can do is think of this with awe and admiration.

Book Reviews

Microbiology

Microbiology and Pathology. By Charles F. Carter, B.S., M.D., instructor in microbiology and pathology, Parkland Hospital School of Nursing, Dallas, Texas. With 200 text illustrations and 25 color plates. Third edition. St. Louis: The C. V. Mosby Co., 1945. Pp. 777. Price $3.50.

This book grew out of lectures and demonstrations to student nurses given during some ten years of teaching. It is divided into three parts. The first has to do with microbiology; the second considers pathology; and the third describes the exercises which have been found useful in laboratory work. The effect as a whole, therefore, is to give a bird's-eye and fairly complete "overlook" of the entire field of microorganisms. Since microbiology is a rapidly growing and extremely important science, it is imperative that both medical students and nurses have an intensive training in at least the elements of the subject. This must, of course, be supplemented by further study of the "journals" devoted to microbiology which, in these days of "antibiotics" provide plenty of pabulum. Here is a text-book of value because of its clear, concise and simple method of presentation. It is interesting, comprehensive and affords a good working knowledge of all that is known to date concerning bacteria, the filtrable viruses, and such immunity as we can obtain through laboratory technique. The physician who feels that he is "running behind" in his reading on this important subject will be edified and brought up to date. He must know at least as much as his nurse about microbiology, and a little more if he can find the time to study it. Questions for review at the end of each chapter serve to stimulate interest, and to test one's knowledge. There are also "references" to books and articles which can lead one to the sources of the information here supplied.

Microbes of Merit. By Otto Rahn, M.D., professor of bacteriology, Cornell University. Illustrated. Lancaster, Pennsylvania: The Jaques Cattell Press, 1945. Pp. 274. Price $4.00.

Physicians deal so much with disease due to various microorganisms that they become accustomed to regard all bacteria as harmful. This book proves the invalidity of this viewpoint. Microbes of merit exist all about us. To them we owe cheese, bread, linen and plastics. By this time everybody knows that penicillin is produced from tiny organisms, the penicillium notatum. From the soil we get gramicidin and streptothrycin which have been as yet only partially put to the test, but they give great promise in destroying other bacteria when present in the human body. These soil bacteria help to dispose of sewage, carrion and other waste, and they increase fertility. Industry has harnessed bacteria to make industrial alcohol, citric and lactic acids, pickles and cocoa.

To read this book is to have a new understanding of the place bacteria hold in keeping the world going. Of course, if there were no bacteria there would be no contagious disease and food would keep indefinitely, but plants could not grow, forests would become deserts, and fertilization of soil would be impossible. "Out of every 30,000 bacteria in the United States, 29,999 are harmless, useful or even necessary." Dr. Rahn says that bacteria are no more dangerous to man than man is to his fellows, and he cites figures to prove this postulate.

Bacteriology and microbiology are just beginning to come into their own. Man must learn which bacteria are dangerous to life and health, then find out how he can utilize their natural enemies to his own advantage. This is nothing but a new application of old knowledge. It goes back to Pasteur and beyond. That great Frenchman was the first to attempt control of the spoilage of wines, and to render dogbite innocuous. However, a long time has intervened and there have been few successful followers until the present time. In this field we are just beginning to go places. This book is a simple and interesting story of man's relation to the microcosm. In this sense it is highly important.

Prosthesis

Facial and Body Prosthesis. By Carl Dame Clarke, Ph.D., associate professor of art as applied to medicine, University of Maryland. Illustrated. St. Louis: The C. V. Mosby Co., 1945. Pp. 200. Price $5.00.

Prosthesis is a word which describes any artificial invention which is used to replace absent parts of the body. Perhaps the commonest illustration is the dental plate or "set" which replaces the natural teeth. The seventy-five diagrams and pictures serve to show how great "defects" can be overcome. Most of these defects here described are so extensive as to be outside the normal province of plastic surgery; for example, the loss of an arm or leg or the superior maxilla. It requires a great deal of knowledge and experience to select the kind of material which is most likely to succeed in a given case. Rubber latex is one of the most satisfactory substances in the reproduction of artificial parts to be worn on the body. Other materials are wax, wax-resins, microcrystalline waxes, and various adaptations of rubber in suitable combinations. Agar and plaster of Paris are useful in making molds and casts. A knowledge of what thermal and general atmospheric conditions will do, in varying climates is also important. The combination of artist and plastic surgeon constitutes the best kind of team work, for one supplements and aids the other. It is evident from this book that Dr. Clarke although not a doctor of medicine, knows much about surgical requirements, including the causes of plastic failures or, at least, unsatisfactory results.

The Epic of Anesthesia

Man Against Pain. The Epic of Anesthesia. By Howard Riley Raper, M.D., of Albuquerque, New Mexico. Illustrated. New York: Prentice-Hall, Inc., 1945. Pp. 337. Price $3.50.

Dr. Raper, a dentist, has set for the subtitle of his interesting book, "The Epic of Anesthesia". He might well have added the word "epoch", for with the abolition of pain, life has been prolonged and health restored to untold millions for whom disease and death would have been nearly synonymous. The story has been told many times before in articles, books and in a motion picture, "The Great Moment". Many of these are abstracted in the final chapter of this book, "Critical Biography". Ether anesthesia was born amid terrible personal conflicts, their supporters and opposers. The battle was even more bitter than that waged by Oliver Wendell Holmes, Semmelweis and others over the cause of puerperal fever and its resultant mortality. But both battles turned out well for humanity and one can well forget them save for their historical significance.

However, the human interest story lies in the biographies of the three men who hold claim as co-discoverers of the use of ether to do away with pain through sleep. Dr. Crawford Long, of Georgia, was a physician; Dr. Horace Wells, born in Hartford, Vermont, practised dentistry in Hartford, Conn.; Dr. W. T. G. Morton, born in Charlton, Mass., practised dentistry in Boston. The matter of priority may still be regarded as unsettled, but it was Morton who advertised his discovery farthest and widest. He was a publicity hound if ever one was born, and had it not been for his deliberate and pathological falsification, his word might have been taken as "first in the field". In any case Dr. Holmes coined the words anesthesia and anesthetic which his letter to Morton well proves. It is also interesting to note that when the question came up as to what inscription should be set on the monument now in Boston Common, should it be to Dr. Long or to Dr. Morton. Holmes solved the matter in his own whimsical way by suggesting that it be to e(i)ther!

Dr. Raper has done an excellent service for historical medicine in bringing together all that is known concerning the early days of ether and of the men who brought it to the whole world, often at great personal sacrifice to themselves. The epic and the epoch shall exist forever side by side.

Exceptional Children

Introduction to Exceptional Children. By HARRY J. BAKER, Ph.D., director, Psychological Clinic, Detroit Public Schools. New York: The Macmillan Company, 1944. Pp. 496. Price $3.50.

The emergency which is upon us in reality constitutes the greatest opportunity teachers of the exceptional child have ever had, regret as we do that it must come this way. Fortunately, many of the places of the millions called to the armed forces and to war production are being most capably filled by persons in various groups of the handicapped. Many more can be employed if we, as teachers, have the insight, ability and energy to give them the timely assistance they need. As the author sees it, this assistance must be of three types.

a. Guidance and instruction in the techniques and understandings required for the different jobs. These jobs range from simple tasks, such as manual labor and the operating of certain power machines and non-intricate machinery, many of which can be handled by various types of the handicapped, to the most difficult and complicated tasks in organization and planning such as could be filled by the most gifted of our handicapped.

b. Sympathetic but realistic building of morale which will help each person to adjust to the changes that war, and the peace that follows, make inevitable, particularly by helping each to realize that now the country needs his contributions. Unfortunately, up to the present the handicapped through no fault of their own have had too much practice in accepting rather than in giving service. This is a long and intricate job that must be done with painstaking care and with the broadest kind of human understanding.

c. Exerting extraordinary effort in properly placing and following up each of the handicapped in jobs where they can continue to be of service to their country and to themselves.

If all of us in America, together with our Allies, can have the combined wisdom to plan and carry through the kind of long range program that will enable those of the armed services and the war workers to find appropriate jobs in areas connected with the raising of standards of living for all people—including better health, housing, food, clothing and cultural and recreational opportunities for all—the handicapped could continue in the jobs they would have held so capably during the war period. Thus, many of them could become assets rather than burdens to society, in addition to having that deep and deserved personal satisfaction that comes to those who feel they are doing a part of the world's work.

To accomplish these aims will take the best our teachers have and will call for additional education on the part of most of us. The materials provided in Dr. Baker's *Introduction to Exceptional Children* serve ideally as a basis for such education. Whole-hearted desire and high purpose will avail us nothing unless the information which will provide the needed understanding of the exceptional is at hand.

First Aid Manual

First Aid. Surgical and Medical. By WARREN H. COLE, M.D., F.A.C.S., professor and head of the department of surgery, University of Illinois College of Medicine, and COLONEL CHARLES B. PUESTOW, M.C. Third edition. With illustrations by Carl Linden, in collaboration with Tom Jones. New York and London: D. Appleton-Century Co., Inc., 1945. Pp. 351.

This first aid manual for medical students and practitioners has been an outgrowth of the war. It is a compilation of all emergent aspects of medicine and surgery written by a specialist in each field. This new edition includes recent advances in the management of wounds, burns, fractures, artificial respiration, antiseptics and chemical warfare. After a preliminary discussion of the principal conditions requiring first aid there is a terse discussion of anatomy and physiology, bandaging wounds, blood vessel injuries, burns, frost bites, fractures, respiratory, abdominal and genito-urinary emergencies, injuries of the scalp and nervous system and medical emergencies. Each subject is evaluated from the standpoint of mechanism and emergency treatment formulated accordingly. The book is clearly written, well illustrated and easy to follow.

A Text-Book of Dentistry

Operative Dentistry. By W. CLYDE DAVIS, A.M., M.D., D.D.S., lecturer in the section of operative dentistry, University of Nebraska College of Dentistry, Lincoln, Nebr. Fifth edition. Illustrated. St. Louis: The C. V. Mosby Co., 1945. Pp. 432. Price $7.50.

The author defines operative dentistry as "that branch of dentistry which treats the mechanical procedures performed within the oral cavity looking to the salvage of the teeth". In filling cavities, the method of Dr. G. V. Black is recommended; namely, cohesive gold foil which Dr. Davis thinks is surpassed by no other material. This book is essentially a text-book for students. It is decidedly conservative as to exodontia. Some of the illustrations show such marked recession of the gums (periodontoclasia) that almost anyone would say "extraction" at the first glance. However, by tying teeth together and using deep caustics which tighten the gums, the patient seems to have useful

dental members which are preferable to "false teeth". There are also illustrations showing the results of root amputation which is still somewhat of a moot procedure in discussions among dentists. The format of the book as to paper, print and "figures" is excellent, and it, no doubt, will continue to enjoy a wide reading.

Burns and Scalds

Studies of Burns and Scalds. Reports of the Burns Unit, Royal Infirmary, Glasgow, 1942-43. By the Medical Research Council. General Introduction by L. Colebrook. With numerous illustrations. London: H. M. Stationery Office, 1944. Pp. 210. Price $1.20.

There are six separate "papers" in this monograph written by physicians of experience in both civil and war practice. The Royal Infirmary receives about one thousand fresh burn cases a year, and in the four years preceding World War II there were 1270 deaths per annum in England and Wales, of which nearly half were in children under fifteen! Treatment is, first, to protect the burned surface by an "antiseptic cream", to give morphine for pain, and to remove the patient to a "burns ward" for special care. General treatment for shock is instituted, and prevention of infection is attempted through the use of sulfa drugs and penicillin. Replacement therapy, that is, replacement of lost fluid by water or plasma or serum, is carried out with postmortem findings in thirty fatal cases, is of especial interest. Nineteen deaths are attributed to the "shock period" (early deaths); and eleven to a "later date". Edema and congestion of the brain was the most common finding. "Complications" were due chiefly to sepsis (streptococcus) or to intercurrent disease. Line drawings and photographs illustrate the text, and the various contributions are valuable.

Self-Analysis

Psychoanalyze Yourself. By E. Pickworth Farrow. With a foreword by the late Professor Sigmund Freud. New York, N.Y.: International Universities Press, Inc., 1945. Price $2.00.

This book contains a full and detailed account of how to follow a practical method of self-analysis. The results Dr. Farrow obtained by the persistent application of the psychoanalytic method to himself were most remarkable. He succeeded in recollecting completely forgotten events of his childhood, and even infancy. This amazing technique enabled him effectively to cure himself of physical as well as of mental disturbances.

While this book will be of great interest to medical men and psychoanalysts, it is nevertheless readily understood by anybody with no previous knowledge of psychoanalysis.

Child Psychiatry

Modern Trends in Child Psychiatry. Edited by Nolan D. C. Lewis, M.D., and Bernard L. Pacella, M.D.. New York, N.Y.: International Universities Press, Inc., 1946. Price $6.00.

There is an urgent need today for early recognition and treatment of psychiatric conditions in the infant, child and adolescent. This book constitutes a survey of significant trends and findings in child psychiatry and guidance which are of vital importance to the health of the nation.

Critique

Blood Pressure Dr. Halls Dally discussed blood pressure before the Hunterian Society, March 25, 1929. (See "Blood Pressure and Disease," *The Lancet,* April 6, 1929, p. 731.) He held that, from seventeen to forty, a man should run 125/80 and a woman 115/75; these values should rise by age sixty to 135/88 for both sexes. Dr. Campbell McClure had professed no interest at all in "average" blood pressure figures, and Dr. Temple Gray said, "A man is as old as his arteries", a statement that has done more harm than any statement in recent medical history, for some men attain ripe old age with arteries in apparently hopeless condition, while others die young with healthy blood vessels. Dally had seen ill nephritics with blood pressures of 85 and men walking around in apparent health with 300. Persons of the low blood pressure type were often artistic, according to some doctors, but suffered from lassitude and found it difficult to do intellectual work. They come to doctors early, though, whereas high blood pressure types do not.

Sex and Fertility Similar beliefs can lead to wholly opposite actions. For instance, many races believe that human sex relations have something to do with soil fertility. What we call chastity and morality are not involved, because savage people seldom grow neurotic over natural functions. However, the savage may either abstain or go to excess in sex relations at planting time; either will accomplish the same purpose. In the one case he will be storing up strength and fertility which will help the seeds or animals generate; in the other he will be assisting the plants and animals to reproduce by giving them a good example. In any case he fails clearly to distinguish between his own impulses, appetites, and processes and those of plants and animals.

Milkman Gods At times we may think that the laundryman and the milkman are gods, but in India the latter really were. Frazer, in his *Golden Bough,* writes that no country in the world has been so prolific of gods as India, and "nowhere has the divine grace been poured out in a more liberal measure on all classes of society from kings down to milkmen. Thus, among the Todas, a pastoral people of the Neilgherry Hills of southern India, the dairy is a sanctuary, and the milkman who attends it has been described as a god. On being asked whether the Todas salute the sun, one of these divine milkmen replied, 'These poor fellows do so, but I,' tapping his chest, 'I, a god! Why should I salute the sun?' Everyone, even his own father, prostrates himself before the milkman, and no one would dare to refuse him anything. No human being, except another milkman, may touch him; and he gives oracles to all who consult him, speaking with the voice of a god."

Frazer said it In the *Golden Bough:* "The advance of knowledge is an infinite progression towards a goal that forever recedes."

THE CRITIC

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Editorial and Executive Offices: 215 Fourth Avenue, New York 3, N. Y.

GREGORY STRAGNELL, M.D. ---------- *Editor*
A. M. MARLATT ---------- *Assistant Editor*
N. F. HANF ---------- *Business Manager*

Subscription Price: Under Domestic Postage, $4 Yearly; Under Foreign Postage, $4.75 Yearly; Single Copies, 40 cents.

Remittance should be made by New York Exchange, post office, or express money order, payable to The Medical Journal and Record Publishing Company, Inc., or by registered mail, as the publishers are not responsible for money sent by unregistered mail. Remittances from Foreign Countries should be made with International Money Orders.

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MARCH 1946

Medicolegal Notes

New Mexico Basic Science Law Not Discriminatory as Against Naturopath

It is recognized without exception, the Tenth Circuit Court of Appeals says, in Polhemus vs. American Association, 145 F. 2d 357, at p. 359, that the police power of a state extends to the right to regulate trades and callings concerning public health. Practitioners of the healing arts are properly subject to police regulations, the details of which are primarily with the Legislature and are not to be interfered with by the federal courts so long as fundamental constitutional rights are not violated. (Watson vs. Mayland, 218 U.S. 173). Unless "the regulations are so utterly unreasonable and extravagant in their nature and purpose that the property and personal rights of the citizens are unnecessarily and in a manner wholly arbitrarily interfered with or destroyed without the process of law, they do not extend beyond the power of the state to pass and they are not subject to Federal interference." (Gundling vs. Chicago, 177 U.S. 183, 188).

These principles the Tenth Circuit Court used to test the complaint in an action instituted in the Federal District Court of New Mexico against the American Medical Association and the New Mexico Medical Society, a voluntary association composed of the members of the medical profession in New Mexico, and certain members of these associations and certain osteopaths and chiropractors, all practising and living in New Mexico, alleging conspiracy in sponsoring legislation by illegal methods in the New Mexico state Legislature, thereby securing the enactment of the Basic Science Law of 1941, for the purpose of creating a monopoly in the practice of healing in the state of New Mexico. It was alleged that the legislation was discriminatory against the plaintiff, a naturopathic physician because it did not entitle him to a Basic Science certificate on the same basis as practitioners of medicine, osteopaths and chiropractors without an examination under the Grandfather Clause.

The Circuit Court held that there was a complete lack of evidence that the Basic Science Law as passed or the manner in which it is being administered is arbitrary or capricious, and the Act is not made arbitrary or capricious by the mere fact that it does not afford the plaintiff the benefit of the Grandfather Clause. "The matter of classification is for the Legislature and cannot be interfered with by a federal court in the absence of a clear showing that the adopted classification is unwarranted and unreasonable. There are no facts in this case which would support such a ruling."

The court did not decide whether the practice of the healing arts constituted interstate commerce within the meaning of the Sherman Anti-Trust Act, because all the transactions alleged related to the practice of such arts wholly within New Mexico, and under no circumstances could such practice be considered commerce or affecting commerce within the meaning of the Act. There was no diversity of citizenship, so that the trial court was held to have rightly dismissed the complaint for the reason that it was without jurisdiction of the action.

Information Not Necessary Regarding Kind of Medicine or Instruments Used in Action for Practising Medicine Without a License

In an action for practising medicine and surgery upon a named person without a license from the Missouri State Board of Health, conviction and fine of $500 and imprisonment for one year was affirmed by the Springfield Court of Appeals under the following facts:

The defendant was a chiropractor licensed by the State Board of Chiropractors. The state made positive proof that he prescribed medicine, both pills (unidentified as to their nature), and extract of ergot in the treatment in question and that he used a surgical instrument. An examination by another doctor showed the physical condition of the person after the treatment and use of the surgical instrument. The evidence also showed that the defendant, after discovering that the person had gone to another doctor, offered her $1,000 for a release and return of the medicine he had prescribed. This evidence was directly contradicted by the testimony of the defendant, with some corroboration.

It was held that, the information against the defendant following substantially the phraseology of the Missouri Statute in charging the crime, it was unnecessary to name or describe the kind of surgical instrument or instruments used, or the kind of medicine or medicines prescribed to enable the defendant to prepare his defense. State vs. Jones, 164 S.W. 2d 85.

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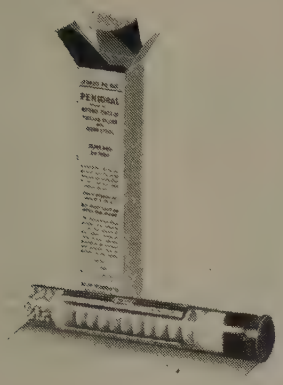

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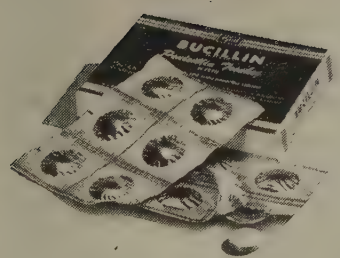

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**Swartz & Reilly, "Diagnosis and Treatment of Skin Diseases" p. 66.*

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Medical Activities of Carlisle Barracks Transferred to Fort Sam Houston

The transference of the medical activities of Carlisle Barracks, Pa., to Fort Sam Houston, Texas, has been announced. Certain portions of the basic training program at the Training Center in Fort Lewis, Wash., have also been moved there, according to this announcement.

The concentration of the Medical Department schools and courses at this new center will represent, it is said, a saving in the transportation of trainees from one school to another in many cases and also will result in more economical and effective operation of the training program. Plans are being made for five battalions which will train about five thousand men in basic and technician courses and a basic Medical Department officers' course of approximately eleven hundred newly-commissioned officers will be in continuous operation.

The basic training will require six weeks and the basic technicians course will take another seven weeks, making a total of thirteen weeks. The technician schools include courses of eight to sixteen weeks for dental, laboratory, x ray, surgical and medical technicians. There will be a school of military neuropsychiatry, a school of roentgenology and medical equipment maintenance technician courses. Residency type training for Medical Corps officers will be carried on at Brooke General Hospital, at Fort Sam Houston, and at nine other General Hospitals throughout the country. Carlisle Barracks will be continued as an Army post and as the location for the Army Information School.

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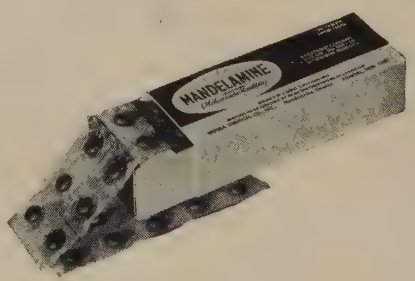

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The Mission of a Medical School

At a symposium on the state of the nation's health, held in New York on Jan. 23rd, which had as its general theme, "Medicine's Tomorrow", Dr. Alan Gregg, director of medical sciences of the Rockefeller Foundation, spoke on "The Mission of a Medical School". He said that medical students must be trained to practice in well coordinated groups. They must learn to use hospital facilities for preventive and protective medicine as well as for the early diagnosis and care of acute and complicated disease. General practice, he suggested, should be considered and dealt with as a specialty and the energies of the medical schools should be focussed on the kind of experience and training students need to fit them to enter eventually any of the specialties. The schools, he asserted, should review their function and their relation to the social and economic circumstances in which their graduates will live, for, as times change, medical education must change too.

"It is the task of the medical school," Dr. Gregg concluded, "to find, to train and to encourage a wide variety of workers, teachers, investigators, students, male and female, young and old, working in a climate of intellectual honesty and kindliness for the welfare of rich and poor and those that are neither rich nor poor. As a human institution, a medical school with a teaching hospital offers a definitely practical yet an infinitely ideal enterprise to all who would find new truth and new hope in learning the limitations and the infinite possibilities of human beings."

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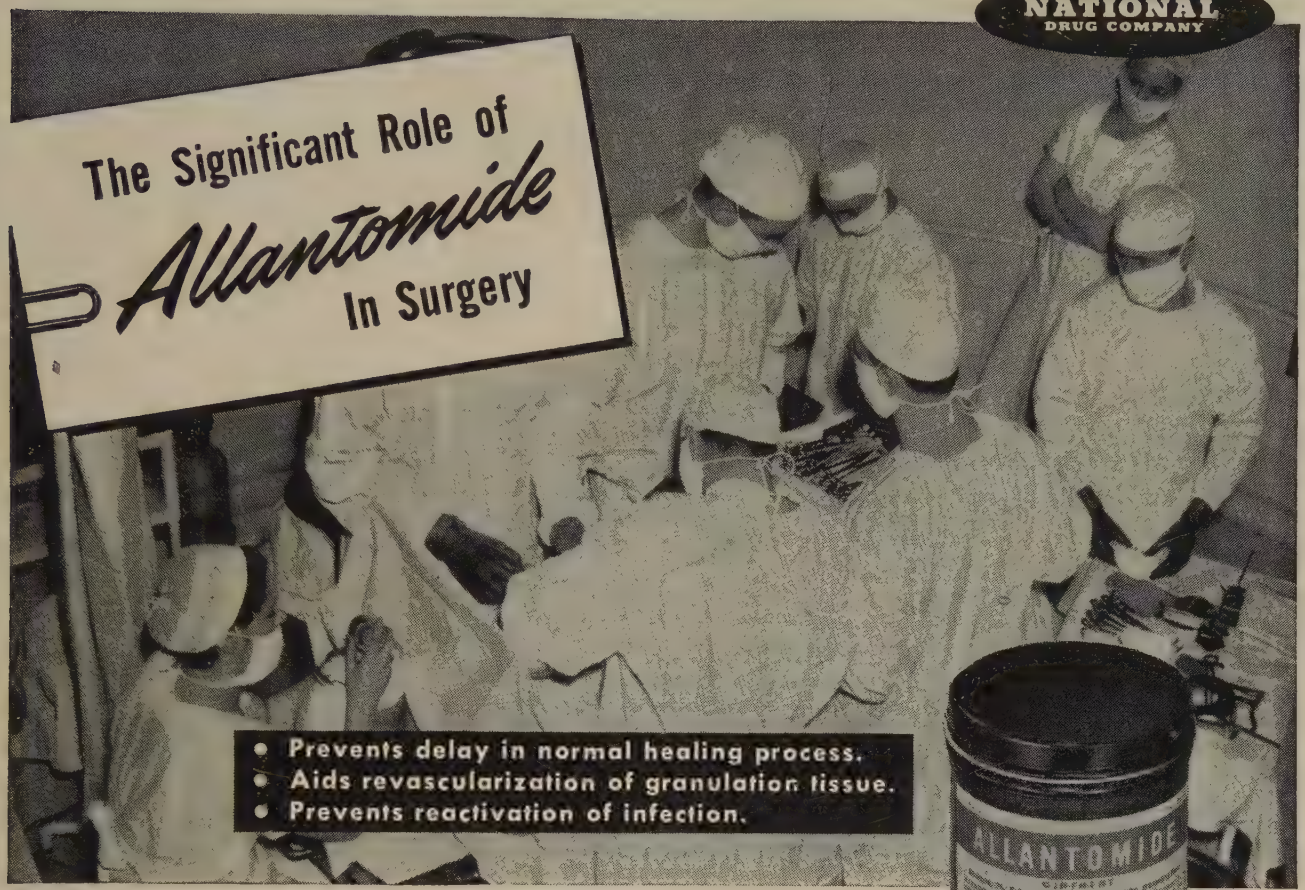
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1. Veal, J. R., and Klepser, R. G., Surgery, **10**:947-956, Dec. 1941.
2. Veal, J. R., Klepser, R. G., and Devito, M. P., Am. J. Surg., **54**:716-720, Dec. 1941.
3. Veal, J. R., and Klepser, R. G., South. Med. J., **36**:292-295, April 1943.

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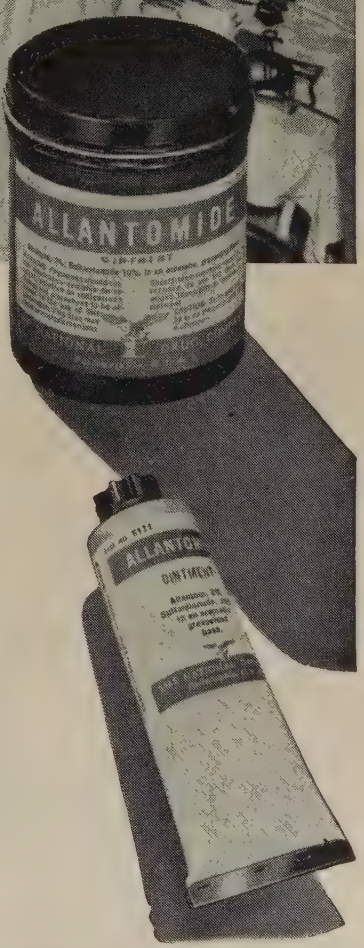

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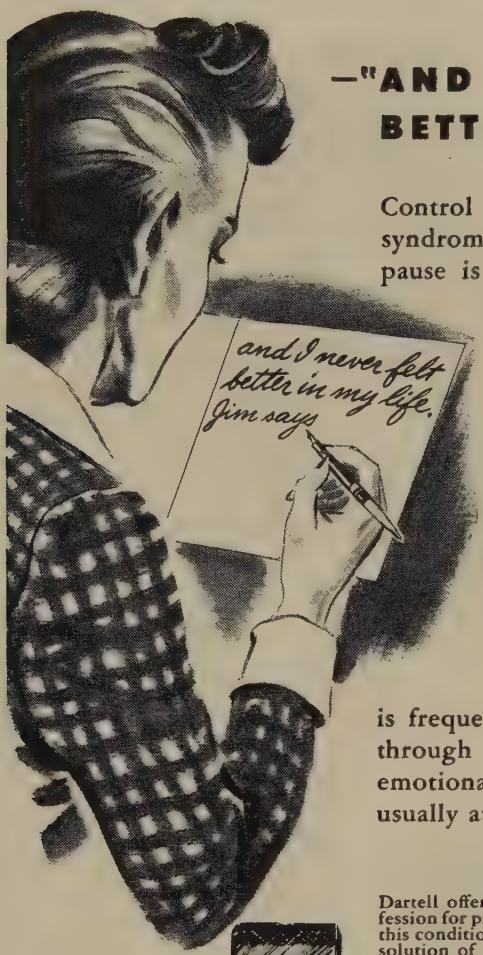

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This is the title of a bulletin which will be issued from time to time by The Sugar Research Foundation, Inc., in the interest of disseminating scientific information about sugar. The first of these bulletins, dated October 1945, contains items on the amino acids, high and low protein diets, uses of histidine, and a method of synthesis which may possibly increase the availability of histidine for scientific and medical use.

Violent Deaths in Canada

There has been a steady increase in the number of violent deaths in Canada during the past few years, according to the Dominion Bureau of Statistics (*The Canadian Doctor*, October 1944). The total of such deaths in 1926 was 5,869, or 62.8 per 100,000 of population; in 1936 it was 7,463, or 68.3 per 100,000; and in 1943 the number was 8,274, or 70.1 per 100,000. The rate was highest in British Columbia.

The suicide total in 1926 was 680, or 7.2 per 100,000. This rate increased to 8.5 in 1936, but declined to 7.8 in 1943. The suicide rate in 1943 was highest in Alberta, with British Columbia second. There were 126 homicides in 1926, 125 in 1943. Accidental deaths in Canada during 1943 totaled 7,385, as compared with 7,202 in 1942, and 7,409 in 1941. Of the total accidental deaths in 1943, 3,024 occurred in public places, 2,456 in homes, 1,864 in industries. Industrial accidents in Canada have increased steadily since 1937.

The greatest contributor to accidental deaths in Canada was the automobile. Other leading causes were mines and quarries, railway accidents, street car and other road transport accidents, and air transport accidents.

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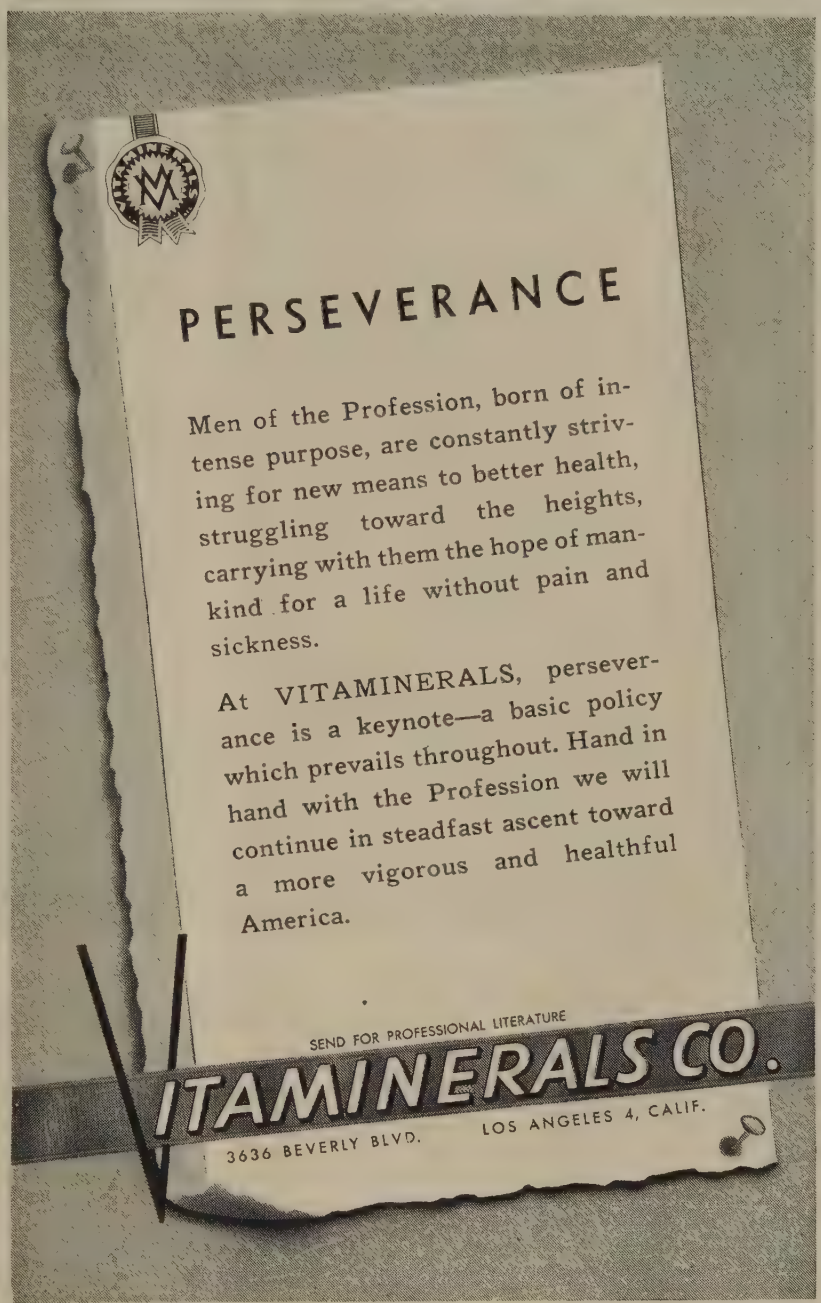
not as marked. This rise in the toll from home accidents among children undoubtedly reflected wartime conditions which deprived youngsters of some of the safeguards they enjoyed in normal times.

Standards for Testing Antiseptics

Dr. George F. Reddish, director of bacteriological research, Lambert Pharmacal Company, in a paper presented at the semiannual meeting of the Scientific Section of the Proprietary Association of America, in which he compared the value of an all-synthetic medium and a semisynthetic medium with the standard broth specified by the U.S. Food and Drug Administration. After explaining the composition of the three media and describing the test used, Dr. Reddish concluded that the Food and Drug Administration broth and the semisynthetic medium of Klarmann and Wright were about equally satisfactory for maintaining the resistance of Staphylococcus aureus to phenol and liquor antisepticus N.F., but that cultures of this organism were weakened when grown in the all-synthetic medium of Wolf which, therefore, was not considered satisfactory.

Bovine Tuberculosis

Cases of tuberculosis of the lungs due to bovine tubercle bacilli are indistinguishable clinically, radiologically or by postmortem examination from cases due to the human tubercle bacilli. Human and bovine bacilli are equally pathogenic for man. This agrees with the opinion long held by American pathologists, many of whom believe that the bovine bacillus is often more highly virulent for man than the average human strain. —Royal Commission on Tuberculosis of Great Britain, A. Stanley Griffith, M.D., chairman, 1944.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The Use of Otosmosan in Otology

S. J. Kopetzky (*Laryngoscope*, 55, 216 (May) 1945), reports the use of a combination of urea and sulfathiazole (otosmosan) in the treatment of suppurative otitis media. This preparation is a chemical combination rather than a mixture of its two principal components; it contains 10.82 percent of urea and 9.68 percent of sulfathiazole with one percent benzocaine in absolute glycerine as a vehicle. Otosmosan was applied locally in the cases reported by being instilled into the affected ear with the patient lying on the opposite side so as to keep the affected ear up to hold the solution. The drug was retained in the ear for about fifteen minutes, and then was allowed to flow out, without drying. Treatment was repeated every twelve hours, the patient being instructed in making the applications correctly.

This method was employed in twenty-one cases of chronic purulent otitis media, in which the discharge was of long standing. The ear became dry in seven cases after treatment for one week to one month in most cases, only one requiring five months' treatment. In six cases the discharge was diminished but the ear did not become entirely dry. Four patients did not return for reexamination. The treatment was also used in four cases in which the discharge had persisted for several years after a simple mastoidectomy. The ear became entirely dry in three cases; the fourth patient showed much improvement after a month's treatment. In eleven cases of persisting discharge after acute suppurative otitis media, in which mastoidectomy had not been done, the ear became dry within a month in six cases (in four of these within a week); five patients did not return for reexamination. In sixteen cases in which ear discharge had persisted after radical mastoidectomy, the ear became dry under treatment in nine cases; three patients showed definite improvement; four did not return for reexamination. A number of patients complained of pain in the ear after the application of the sulfa and urea combination. This can be prevented by avoiding the use of water with the preparation. This treatment should not be used in patients showing an idiosyncrasy to sulfa drugs, nor if there are any symptoms of intracranial complications.

Making Health Visible.—This is the title of a agreed upon by the Academy of Medicine and Health Museum, which compresses into thirty-two pages, with twenty-seven pictures, the original objectives as agreed upon by the Academy of Medicine and Health Council founders. It outlines the future aims of the Museum, describes the exhibits and presents many interesting facts about the first health museum on the Western Continent. It was issued after nine years of corporate existence and following the Museum's first five years of active life. The booklet contains much serious reference material for educators and future historians of health education, and is available for twenty-five cents, including postage, from the Cleveland Health Museum, 8811 Euclid Avenue, Cleveland 6, Ohio. Dr. Bruno Gebhard, is director of the Museum.

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Fatal Accidents in the United States in 1945

The death toll from accidents of all types in the United States in 1945 is estimated, on the basis of incomplete data, to be around 96,000, or 1,000 more than the number that occurred in 1944, according to the *Statistical Bulletin* of the Metropolitan Life Insurance Company. The increase was due solely to a rising tide of motor vehicle fatalities that set in just after V-J day, when restrictions on the use of gasoline were removed. The motor vehicle toll in 1945, it appears, will be in the neighborhood of 29,000 lives, some 5,000 in excess of the number in 1944. This increase in motor vehicle fatalities was more than enough to offset substantial declines in the numbers of deaths due to occupational accidents, accidents among men in the armed services, and accidents of a catastrophic nature.

Deaths from accidents in and about the home probably will run a few hundred above the total of 32,000 recorded in 1944. Home accidents, once again, were the leading class of fatal accidents. Occupational fatalities were kept at prewar levels throughout the war period. Catastrophes were less frequent and took considerably fewer lives in 1945 than in the preceding year. Up to the closing days of 1945 the records of the Company showed a total of around 1,700 deaths in such accidents, or less than half the corresponding number for 1944. Nevertheless, the toll in 1945, as in the other war years, was above that for the years immediately preceding our entry into the conflict. There were fewer victims of catastrophes in 1945 than in 1944, in tornadoes; in fires; in service flying crashes; in accidents resulting from the manufacture, storage, and transportation of explosives; as well as in water transportation, mining, and railroad accidents. More deaths, however, were recorded both in bus and commercial air transportation.

Postwar Trends in Medicinal Drugs

Dr. Edward C. Merrill, assistant vice-president, United-Rexall Drug Company, in a paper presented at the semiannual meeting of the Scientific Section of the Proprietary Association of America, held in New York on December 5, 1945, traced the effects of war shortages that necessitated the use of substitutes both in compounding medicines and in packaging them. He had found a rapid abandonment of substitute materials with a return to prewar formulations as crude materials become more freely available, but he also found that the trend to definite synthetic chemical substances with known therapeutic effect, well under way even before the war, had not only been continued but even accelerated by the war.

Increased attention was being paid, he said, to the elimination of insects as potential carriers of disease, with the development of revolutionary new insecticides and the newer means of dispersing them. He commented on the rapid development of chemotherapeutic agents following discovery of the sulfa drugs and penicillin, and predicted that the power of research would inevitably bring many other antibiotic agents.

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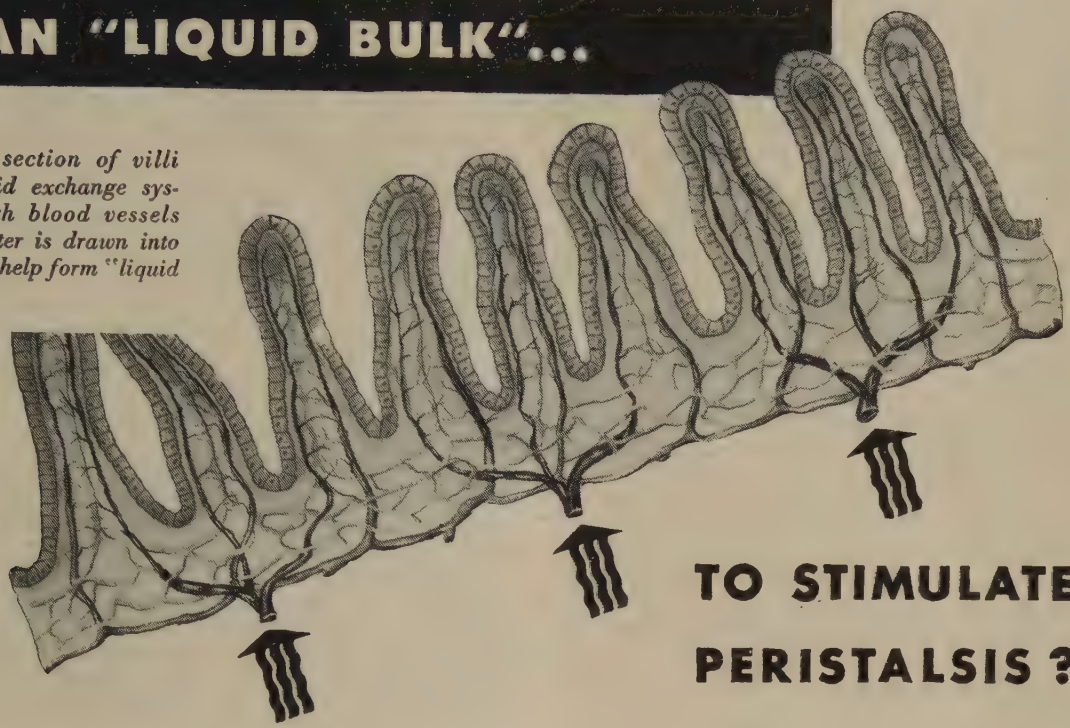

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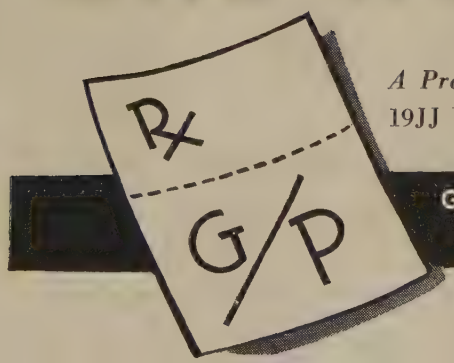

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Dr. Robert Ley's Brain

The brain of Dr. Robert Ley, Nazi leader, which was shipped by air to the United States in November of last year for gross examination and microscopic study by Army pathologists shows "a long-standing degenerative process of the frontal lobes," according to Major General Norman T. Kirk, Surgeon General of the Army. Degeneration in the brain of Dr. Ley, he continued, was sufficient to account for the unusual behavior of the former German labor leader.

Reports on the results of the neuropathological study of the brain, which was made at the Army Institute of Pathology under the direction of Colonel J. E. Ash, stated that photographs showed considerable thickening of the brain covering over the frontal lobes of both sides. The underlying convolutions as well as some of the blood vessels were hidden from view by this thickening. However, the rest of the brain had a normal appearance, in that it was delicate and transparent. Slight atrophy was indicated by the prominent condition of the grooves between the convolutions of the frontal lobes, and examination of the frontal lobes under the microscope disclosed a long-standing degenerative process, which is called chronic encephalopathy. This disease process, could not be ascribed to the airplane accident Dr. Ley suffered in 1917, because the damage was symmetrical, according to the Army pathologists. They also added that there was no evidence of preexisting meningitis.

Dr. Ley's type of degeneration, the report pointed out, was sometimes seen in those addicted to alcohol, but proof that alcohol was in itself a causative factor was completely lacking. It was pointed out that the degeneration was of sufficient duration and degree to have impaired Dr. Ley's mental and emotional faculties and could well account for his alleged aberrations in conduct and feelings.

Tuberculosis Hospital in Honduras

The new 108-bed tuberculosis hospital now under construction at Tegueigalpa, capital of Honduras, is scheduled to be ready for occupancy in October of this year, according to an announcement by the Institute of American Affairs. Ground was broken for the hospital on October 23, 1944, and the work has been pushed forward speedily. The project was financed by funds of the Inter-American Cooperative Health Service, to which Honduras and the Institute recently pledged $300,000 each for the continuation of the plans of the Service for improving health standards.

In addition to the cash commitment, the Honduran government provided land for the building and spacious grounds, as well as trucks necessary for hauling building materials and equipment. The national government of Honduras likewise extended public utilities —light, water, and sewers—to accommodate the hospital. The Honduran government already has appropriated funds for minimum operation costs at the outset. After completion of the building and installation of equipment, the tuberculosis hospital will be dedicated and turned over to the Honduran republic as another evidence of the cooperative interest of the Americas in improving hemisphere health conditions.

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Work of Medical Department in World War II

In his biennial report to the Secretary of War, General George C. Marshall, Chief of Staff of the United States Army, paid tribute to the Medical Department for its outstanding work in World War II, as follows:

"The remarkable reduction in the percentage of deaths from battle wounds is one of the most direct and startling evidences of the great work of the Army medical service. In the last two years Army hospitals treated nine million patients; another two million were treated in quarters and more than eighty million cases passed through the dispensaries and received outpatient treatment. This tremendous task was accomplished by forty-five thousand Army doctors assisted by a like number of nurses and by more than one-half million enlisted men, including battalion-aid men, whose courage and devotion to duty under fire has been as great as that of the fighting men they assisted.

"One of the great achievements of the Medical Department was the development of penicillin therapy which has already saved the lives of thousands. Two years ago penicillin, because of an extraordinarily complicated manufacturing process, was so scarce the small amounts available were priceless. Since then mass production techniques have been developed and the Army is now using 2,000,000 ampules a month.

"Despite the fact that United States troops lived and fought in some of the most disease-infected areas of the world, the death rate from non-battle causes in the Army in the last two years was approximately

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that of the corresponding age group in civil life—about 3 per 1,000 per year. The greater exposure of troops was counterbalanced by the general immunization from such diseases as typhoid, typhus, cholera, tetanus, smallpox, and yellow fever, and, obviously, by the fact that men in the Army were selected for their physical fitness.

"The comparison of the non-battle death rate in this and other wars is impressive. During the Mexican War, 10 percent of officers and enlisted men died each year of disease; the rate was reduced to 7.2 percent of Union troops in the Civil War; to 1.6 percent in the Spanish War and the Philippine Insurrection; to 1.3 percent in World War I; and to 0.6 percent of the troops in this war.

"Insect-borne diseases had a great influence on the course of operations throughout military history. Our campaigns on the remote Pacific Islands would have been far more difficult than they were except for the most rigid sanitary discipline and the development of highly effective insecticides and repellents. The most powerful weapon against disease-bearing lice, mosquitoes, flies, fleas and other insects was a new chemical compound commonly known as DDT. In December 1943 and early 1944, a serious typhus epidemic developed in Naples. The incidence had reached 50 cases a day. DDT dusting stations were set up and by March more than a million and a quarter persons had been processed through them. These measures and an extensive vaccination program brought the epidemic under control within a month. Shortly after the invasion of Saipan an epidemic of dengue fever developed among the troops. After extensive aerial spraying of DDT in mosquito-breeding areas, the number of new cases a day fell more than 80 percent in two weeks. The danger of scrub typhus in the Pacific Islands and in Burma and China was reduced measurably by the impregnation of clothing with dimethyl phthalate.

"The treatment of battle neurosis progressed steadily so that between 40 and 60 percent of men who broke down in battle returned to combat and another 20 to 30 percent returned to limited duties. In the early stages of the war less than 10 percent of these men were reclaimed for any duty.

"The development of methods of handling whole blood on the battlefield was a great contribution to battle surgery. Though very useful, plasma is not nearly as effective in combating shock and preparing wounded for surgery as whole blood. Blood banks were established in every theatre and additional quantities were shipped by air from the United States, as a result of the contribution of thousands of patriotic Americans. An expendable refrigerator was developed to preserve blood in the advanced surgical stations for a period of usefulness of twenty-one days.

"So that no casualty is discharged from the Army until he has received full benefit of the finest hospital care this nation can provide, the medical service has established a reconditioning program. Its purpose is to restore to fullest possible physical and mental health any soldier who has been wounded or fallen ill in the service of his country.

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Mr. Bobst Becomes Chief Executive of Warner & Co.

Elmer H. Bobst, former president of Hoffmann-La Roche, Inc., and one of the pioneers in the development of interest in hormones and vitamins in both the medical and food fields, has assumed the presidency and general direction of William R. Warner & Company, Inc., together with its domestic and foreign subsidiaries. He succeeds G. A. Pfeiffer, who is retiring from the business to engage in educational and charitable activities. In making this announcement, Mr. Bobst said that the immediate objectives in his new post would be a widening of the scope of the Warner Institute for Research in devloping new remedies in step with advanced pathology and improving existing ones; an extensive and original program for pooling of pharmaceutical research by several pharmaceutical firms here and abroad; and a continuation of his efforts in what he terms the advance of "pharmaceutical elegance"—making medical products pleasant and easy to take. William R. Warner & Co., he said, would, under his direction, endeavor to attract more young scientists to the field of pharmaceutical research, and would encourage the establishment of fellowships in the universities which will serve the double purpose of enlisting the services of qualified men and of providing additional channels for research activities.

International Association of Allergists.—Dr. Fred W. Wittich, secretary-treasurer, American College of Allergists, announces that, after planning and study by representative officers of various existing national allergy societies in different countries, the International Association of Allergists has been incorporated, according to the *J.A.M.A.* Pan American and Pan European sections will be affiliations of the association. It is planned to hold the first international congress in Paris in 1948, when universal standards of terminology and classification of allergies will be adopted. Preliminary to this program it is proposed that the same subjects will be the theme of the first Pan American Congress to be held under the auspices of the American College of Allergists at its next annual meeting, tentatively set for Oakland, Calif., June 28-30. Headquarters and executive offices of the new association have been established at 401 La Salle Medical Building, Minneapolis.

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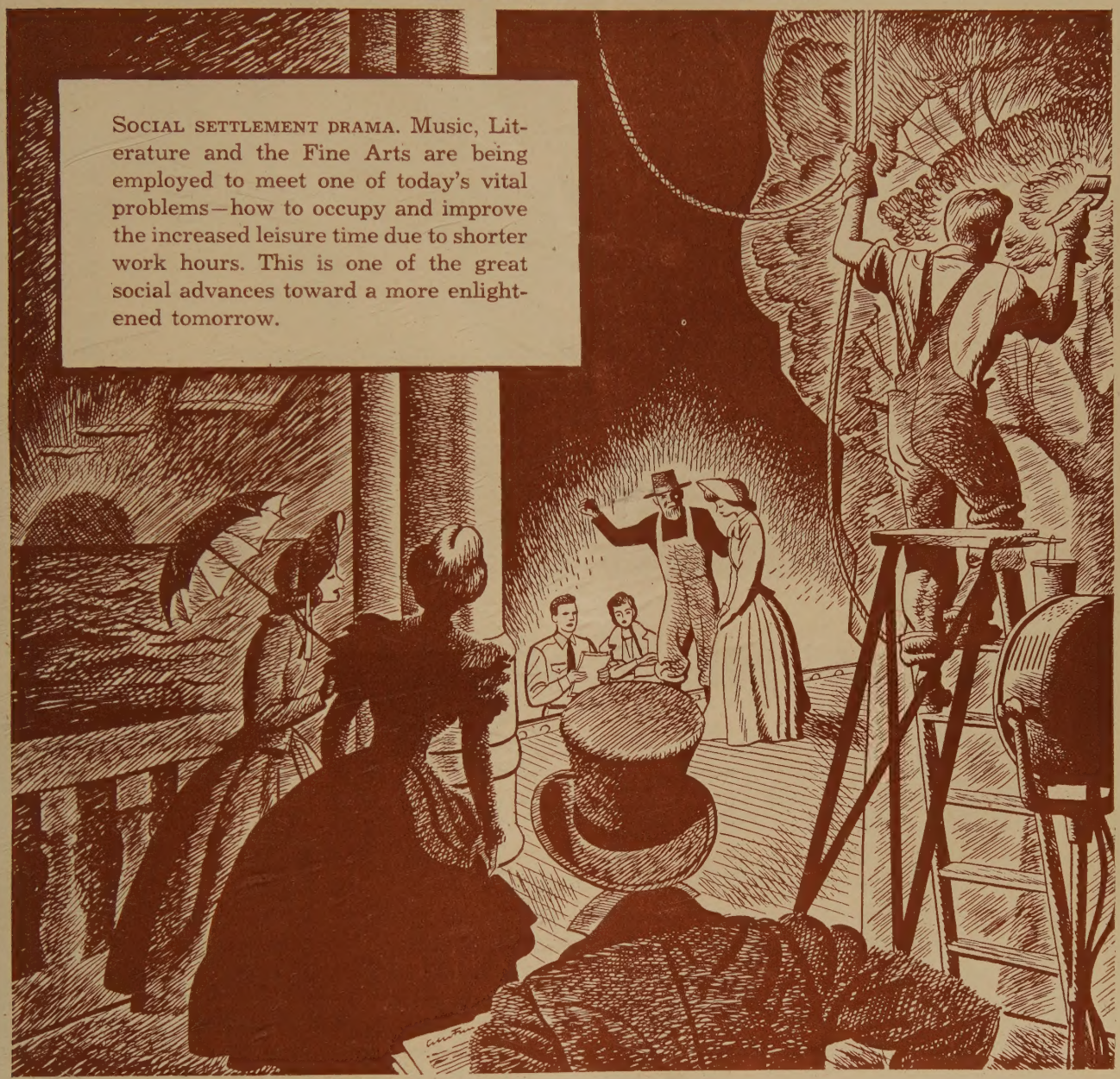

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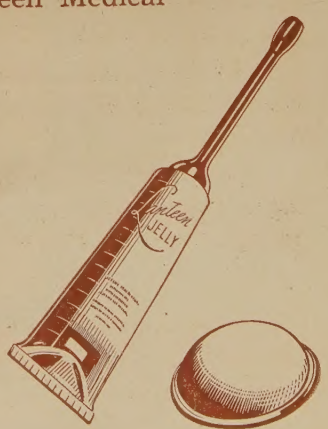

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